

EDUCATION AND EMPLOYMENT OF ARTS AND SCIENCE GRADUATES

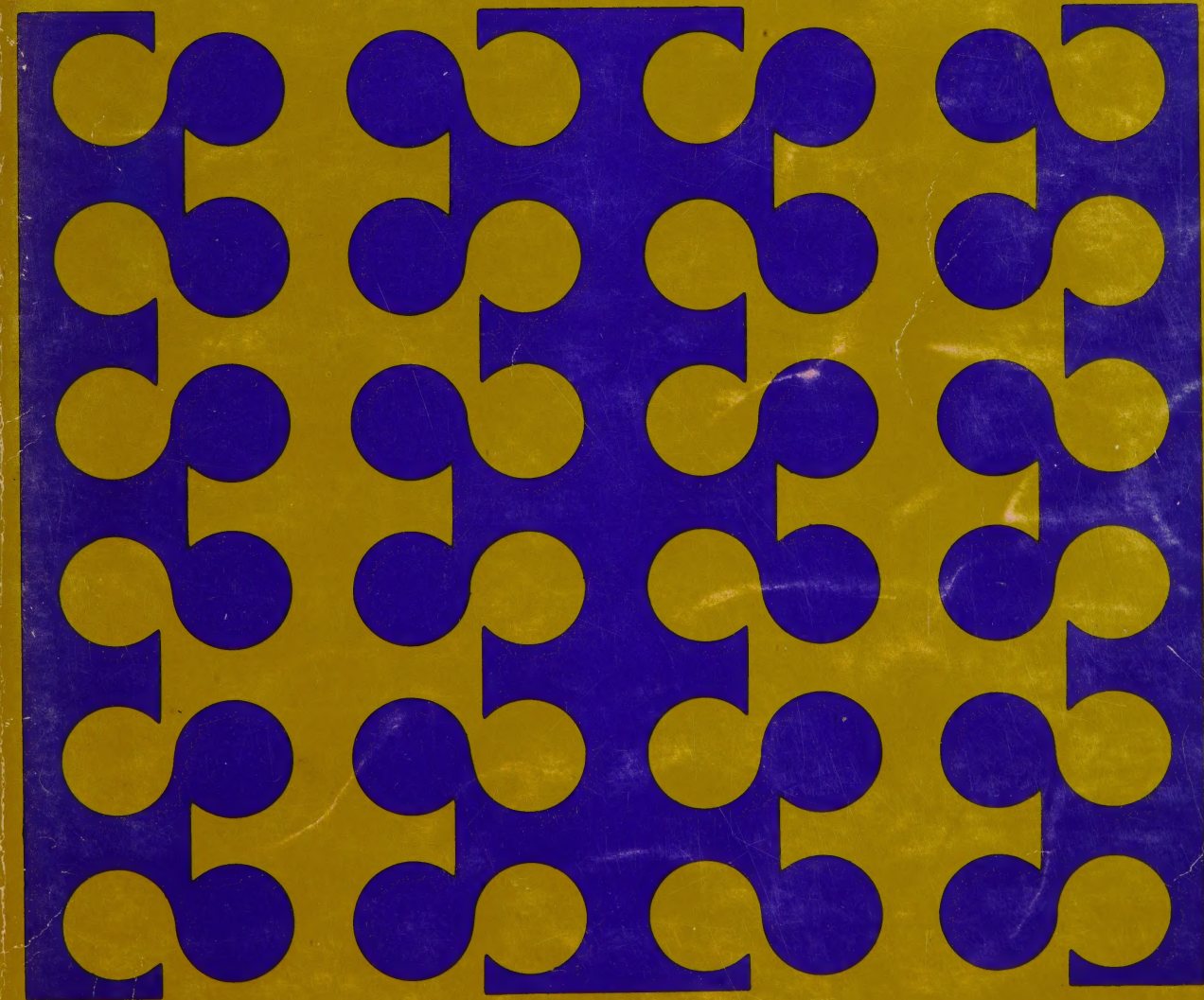
The Last Decade in Ontario

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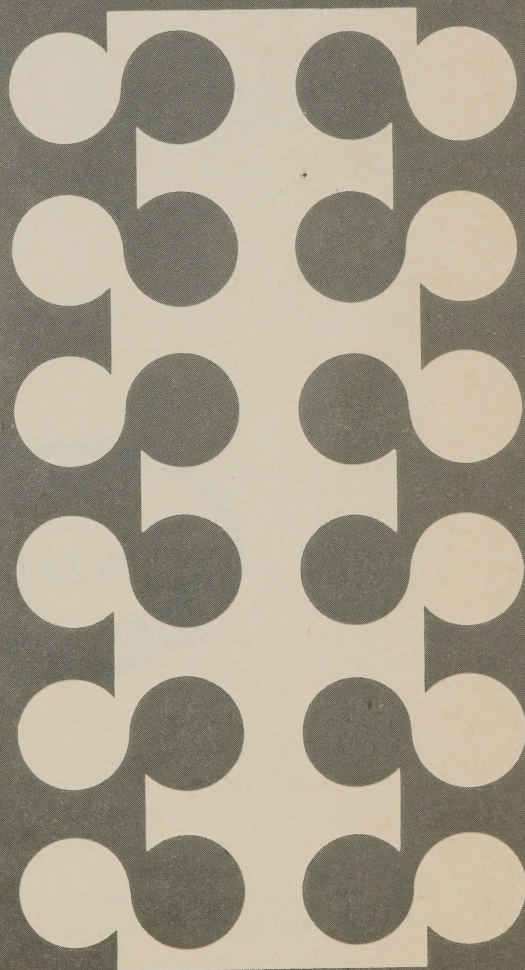
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EDUCATION AND EMPLOYMENT OF ARTS AND SCIENCE GRADUATES

The Last Decade in Ontario

A Study Prepared for the Commission
on Post-Secondary Education in Ontario



educational system. In *Education and Employment of Arts and Science Graduates*, much useful evidence is assembled which helps to throw light on the problem in relation to the B.A. degree.

This study was contracted to Professor Edward Harvey of the Ontario Institute for Studies in Education in May 1970. The results of his work were submitted to the Commission in August 1971.

On the apparently realistic premise that holders of the B.A. degree now encounter increasing difficulty in obtaining jobs, as compared with graduates of a decade ago, Professor Harvey set out to discover some firm data on the work experience of graduates from the years 1960, 1964 and 1968. A sample of over 4,000 individuals, taken from B.A. graduates of four Ontario universities—the University of Toronto, Queen's University, McMaster University, and the University of Waterloo—yielded a response rate of 64 per cent to the questionnaire. The analysis of the resulting data is designed to reflect the attitudes of graduates in relation to how they believe their education has or has not prepared them for their jobs, what kinds of educational experiences they have had, and what kinds of experiences they have had after entering the labour market.

Chapter 1 comprises a synoptic review of the existing literature on the changing occupational structure of the Canadian work force and the changing structure of post-secondary education in Canada. The methodology of the study and the description of the respondents in the data base are set out in Chapters 2 and 3. The empirical findings are described and analyzed in Chapters 4, 5, and 6, while Chapter 7 summarizes the principal implications and conclusions to be drawn from the survey.

The opinions and conclusions contained here are solely those of the author, and publication of this study does not mean that these opinions and conclusions are necessarily endorsed by the Commission.

EDUCATION AND EMPLOYMENT OF ARTS
AND SCIENCE GRADUATES

The Last Decade in Ontario

A Report Submitted to the Commission on
Post-Secondary Education in Ontario

Edward B. Harvey
Ontario Institute for
Studies in Education
and University of Toronto
August, 1971

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Introduction

This study is based on the premise that there is increasing difficulty for holders of university arts and science undergraduate degrees in obtaining jobs with the same ease and the same degree of prestige as such graduates of a decade ago. As demonstrated in this study, there is a paucity of hard data relating to this question. The principal goal of this study is to gather and analyze such data and to present it in such a form that it will be useful to educational planners anxious to know more about the specific ways in which the labour market situation has changed in the last ten years for the arts and science university undergraduate degree holder and to what extent a knowledge of such past events may inform our prediction of future trends.

This study represents a first effort in Canada to follow up systematically a population of university graduates to discover more about how they feel their education has or has not prepared them for their jobs, what kinds of educational experiences they have had, and what kinds of experiences they have had on entering the labour market after graduation. In order to assess how the situation has changed over the past few years, we have selected graduates from the years 1960, 1964 and 1968. Our sample (over 4,000 cases) is a large one. Graduates of four universities are involved: the University of Toronto, Queen's University, McMaster University and the University of Waterloo. These universities were

selected in an effort to obtain as adequate a representation as possible in the different kinds of universities found in Ontario. The response rate to our survey was 64 per cent. Every effort has been made to ensure the reliability and representativeness of the data base.

This report contains seven chapters, each of which is briefly described in order to guide the reader who may have specific interests within what is essentially a very broad study.

Chapter I represents a general review of existing literature with regard to two specific areas. The first of these is the Canadian occupational structure and some of the principal patterns of change that have characterized it in recent years. In addition to summarizing and discussing some of these patterns of change, we also consider some of the ways in which the analysis of such patterns of change has been approached. In particular, attention is given to manpower forecasting.

The second principal area considered in this general review are changes in the structure of Canadian post-secondary education. Attention is given to how institutions of post-secondary education have grown and diversified in recent years. Attention is also given to the content of such education and a brief examination is made of the question of vocational as opposed to generalist training within the post-secondary educational sector. Finally, an effort is made to

produce a summary of the principal features of post-secondary education that concern us and the principal features of the structure of the labour market. We then consider how these two entities are linked, and we outline the general perspective from which we approach the linkage.

In Chapter II, a detailed account is given of various methods for analyzing the linkage between educational systems and the labour market. The particular method we have used in this study, historical cohort analysis, is outlined and a rationale advanced for its selection over other methods. Further detailed information is given on the development of the questionnaire, our sampling frame, our rate of response, the means used to circumvent the problem of bias through non-response, the way in which the data were coded and prepared for computer processing and, finally, the overall design of our analysis including the ways and means of using statistical inference and our procedures for measuring our principal independent and dependent variables used in the study.

Chapter III presents a brief description of the principal characteristics of the data base providing data on such factors as the sex ratio found in our sample of respondents, respondents' citizenship, data on respondents' socio-economic backgrounds and data on respondents' home towns as well as present patterns of residence. The purpose of this chapter is to provide the reader with a general overall statistical

description of the 4,000-plus respondents who participated in this survey.

Chapters IV, V, and VI represent the principal substantive chapters of the report. Each of these chapters examines a specific aspect of the data base. Within each of the three major substantive areas, three levels of analysis are conducted. First of all, basic distributions for the entire sample are examined. Second, a more detailed analysis is conducted in terms of sex and year of graduation; that is, we wish to see how males and females differ with regard to these areas and we wish also to discover how 1968 graduates differ from 1964 graduates or 1960 graduates. It is also important to point out at this time that in order to avoid redundancy, all discussion of methodological issues, such as how variables were measured, has been treated in Chapter II. Thus, the reader is urged to examine the content of Chapter II before examining the substantive findings reported in Chapters IV, V, and VI.

Chapter IV presents data on the educational and occupational attitudes of our respondents. Examined in this connection are such matters as our respondents' attitudes to whether or not their undergraduate education proved useful or useless to their subsequent employment, the extent to which they view work satisfaction as important in their overall life happiness, the extent to which they were influenced by considerations about work when deciding on a

major field of study during their undergraduate education, and the kinds of values they seek to realize through their occupations. In short, Chapter IV assesses the attitudes and variations in attitudes for our respondents in educational and occupational areas.

Chapter V presents data on the educational experiences of our respondents. A number of issues are examined in this connection, including types of undergraduate degrees received by respondents, major fields of study pursued during undergraduate education, whether they changed universities, faculties or courses during their undergraduate program, what was their major pattern of financial support during training, and a number of factors relating to their involvement, if any, in programs of post-graduate education.

Chapter VI is similar to Chapter V in that it presents information on the actual experiences of our respondents, although in this case the experiences measured relate to the labour market activities of our respondents after graduation. In this connection, a number of areas are examined, including the prestige of full-time jobs obtained by respondents after graduation, the types of employers they have had, the way in which these patterns have changed between 1960 and 1968, how jobs were obtained, reasons for changing jobs, overall satisfaction with jobs held, experiences with unemployed, the number of jobs applied for after graduation and the number of job offers received.

It is appreciated that many readers of this report will want to apprise themselves quickly of principal findings without consulting in detail the necessarily large volume of tables included. For this reason, at the beginning of each chapter a point-form summary of principal findings has been provided. The more detailed tables and discussion of such tables follows this in each case.

Finally, Chapter VII draws together the principal findings in the most general form and undertakes to assess the implications of these findings to the changing linkage between university undergraduate education and the labour market.

Chapter I

University General Education and Jobs:

A General View

Introduction

The principal purpose of this chapter is to orient the reader, in general terms, to the issue of the changing relationship between post-secondary education and the labour market. This goal is approached in two ways.

First, a sampling of the literature is reviewed to suggest the ways and extent to which the educational system-labour market linkage has been viewed as a problem. The major conclusion arrived at in this regard is that while the changing relationship between post-secondary education and the labour market is indeed viewed as a problem area, there is a lack of systematic research data bearing on the question.

Second, a review is conducted of some of the general trends affecting both the Canadian labour force and post-secondary education over the past decade. The principal conclusion reached is that available literature pertaining to trends in the labour force and post-secondary education provide a useful backdrop for our research question but are in themselves too general to provide a substitute for systematic data gathered on particular aspects of the linkage between systems of post-secondary education and the labour market, such as the changing nature of this linkage for graduates with B.A. or B.Sc. degrees.

A. Higher Education and Jobs

1. Perceptions of the Problem

The educational expansion during the decade of the 60s was backed by both popular and learned sentiment that regarded education as a "good-in-itself," and by a belief that increased economic and national progress rested upon a proportionate increase in a highly educated populace. International competition generated by factors such as the technological achievements of the U.S.S.R. further spurred interest in scientific training within the West. A rapidly changing technology and burgeoning economy were viewed as having an insatiable appetite for the highly trained who, in turn, were viewed as stimulating further technological change and economic growth.

In this vein, Eli Ginsberg observed that:

. . . public leaders and academic economists were giving birth to a new ideology. They proclaimed that the key to economic development is liberal expenditures for education, which, by improving the quality of labour, are the heart of productivity increases. From the President down, the leadership proclaimed throughout the land: "Education pays, stay in school". The economist calculated to a fraction of a per cent the extent to which education pays.¹

There were few dissenting voices. One was Seymour Harris who wrote in 1949 that the past association of rising income with increased years of schooling did not mean that this situation would necessarily continue or that education was the exclusive explanation of higher incomes.² Harris argued that the supply of college-trained men and women would become excessive relative to openings, causing incomes in the favoured employments to fall. In general, Harris questioned the continued economic and social gains of higher education and pointed to the serious problems implied by a university educated proletariat.³

However, this position was not generally recognized until the late 60s when it became apparent that a greatly increased supply of university graduates faced a tightening job market.

An example of the emerging literature reflecting growing awareness of this problem is found in the 1970 report issued by the University of Toronto Graduate Student Union, Who Needs the Ph.D.?⁴. In this report, data gathered on 190 University of Toronto Ph.D. and post-doctoral job seekers indicate that of the 190, 105 were able to obtain employment and 85 were not. Of the 105 obtaining employment, 73 indicated satisfaction with the work obtained, while 32 were not satisfied. On the basis of these findings, this report takes issue with an earlier report of the School of Graduate Studies at the University of Toronto which did not suggest the existence of such an employment crisis.⁵ It is contended

in Who Needs the Ph.D.? that the report of the School of Graduate Studies under-estimates the number of Ph.D.'s actually seeking jobs and that university department statistics on how many graduate students are seeking jobs are not reliable.

A further report of the School of Graduate Studies in November, 1970,⁶ contends that only seven of 241 graduate student job seekers were unemployed. However, it should be noted that this report did not consider further research in the form of post-doctoral fellowships to be part of an unemployment problem while the Graduate Student Union report suggested that engaging in such further research might be a result of lack of success in finding other suitable employment.

The concern in the present discussion, however, is not to enter upon a detailed analysis of the varying positions advanced in these reports but rather simply to suggest the existence of the problem reflected by such reports.

The position of the university graduate in sciences has been well stated in an article by Ivars Peterson and David Kane entitled "The Jobless Science Grad,"⁷ in which they observe that:

About 70 per cent of the Ph.D. output is re-absorbed by the universities. Industry should be absorbing more of the university graduates . . . (but) . . . for too long the university, the government (provincial

and federal) and industry have been working in isolation from each other. . . . Industry should be doing more research and development in Canada. It could participate in university-industry co-operative programs in the sciences. The government of Canada must improve its role in the development and proper utilization of Canadian scientific manpower . . . It could co-operate with SCITEC in providing accurate information on careers and job opportunities. It has the tools of tax incentives and the laws of Parliament to prod industry to improve its performance in research and development.⁸

The position this article takes regarding the supply of students and the type of education they receive is that "there are too many Ph.D.'s being produced now. The Master's Degree could be reinstated as an acceptable terminal degree, especially for those going into industrial research and teaching . . . (and that) . . . Graduates have overspecialized. The Ph.D. could be encouraged to take a broader range of courses."⁹

The Association of Universities and Colleges of Canada addressed a recent bulletin¹⁰ to the question of the employment of university graduates. In Part I of this issue a review is presented of problems and solutions which were drawn from a report prepared for the A.U.C.C. Board of Directors. Reference is made to the fact that the question of the

unemployment of university students has been relatively un-explored. The bulletin observes "that is due perhaps to the fact that until very recently the demand for university graduates far exceeded the supply available."¹¹

It is further observed that the studies which have been made are often "piecemeal," for example: "Very few of the reports available study the problem for Canada as a whole, by region, by province and by disciplines . . . (and that) the division of jurisdictions between the federal and provincial governments has resulted in one level of government being concerned principally with the demand for university graduates and the other with its supply, with little significant relationship being attempted between these two aspects."¹²

It is noted that the problem includes a lack of awareness by students of the needs of the market and that, "similarly, the universities, the faculties, the departments, have barely begun to adjust their planning and development to the new market situation."¹³

The bulletin suggests long-range and short-range "many-pronged" approaches to the problem, feeling that a "master plan" involving the government would be both "unrealistic" and "undesirable." Under the long-range approach, they call for "planning authorities at all levels," particularly university planners, to take into account manpower requirements and demand. Curriculum requires revision and "graduate programs and training for research will have to be revised

with a view to preparing more "generalists" or graduates capable of undertaking a broader spectrum of tasks."¹⁴ Short-term approaches include guidance and counselling services for the student and further suggestions that "attempts should also be made to develop attitudes in university graduates which will result in greater mobility and flexibility in their choice of careers."¹⁵

Part II of the University Affairs bulletin is addressed to the question "is there an employment crisis?" Using manpower needs as a criterion for the development of graduate education in Ontario, it argues that "Ontario universities are unlikely to be self-sufficient in meeting their own staffing needs until 1975-76 or later,"¹⁶ although it is admitted that "the analysis is in gross terms and does not necessarily apply to individual disciplines. Potential over-supplies and under-supplies in certain disciplines do bear careful study; so does the substitutability of academic preparation for positions other than originally intended."¹⁷

Finally, the bulletin observes that "supposing we could produce a perfect manpower forecast, should this be utilized to place a rigid set of constraints on graduate enrolments? . . . To date, the educational system has operated largely in response to social demand."¹⁸ The report concludes by reiterating the point that enrolments are affected by student preferences, which may reflect "fashion" but may also be "definite trends in society's order or priorities."¹⁹ Thus

one is left with the dilemma of "to what extent ought the universities to shift to attempt to meet these demands, even though the outlook for jobs directly related to field of study may be uncertain?." ²⁰

Until the early 1960s in Canada, the possession of a university degree was an excellent guarantee of securing employment closely related to field of study or occupational aspiration. Up to that point in time, the demand for university graduates generally exceeded the supply. A recent publication of the Canada Department of Manpower and Immigration notes the extent to which this situation has changed:

. . . Today, the labour market situation for university graduates has become much more competitive. A major factor has been the substantial increase in the supply of graduates in most fields. The number of students in universities has risen from 101,934 in 1959-60 to 299,317 in the 1969-70 academic year. On the other hand, employment opportunities to absorb this increase have developed more slowly. At one time, arts graduates obtaining pass or general degrees had job opportunities open to them in many areas of employment, but today the emphasis is on higher and more specialized training as a necessary qualification for most jobs. ²¹

The report further observes that:

Graduates in many disciplines and professions, that three or four years ago would have found suitable employment well before graduation, had more difficulty in 1970. In many instances, employment is influenced by two factors: where the graduate is prepared to work and the area in which employment is available. The demand for certain graduates is higher in some areas than others, just as competition in the urban and suburban areas is higher than the rural and less populated areas. University graduates who combine specialization, such as engineering and business degrees, may find more job opportunities open to them in either administration, sales or engineering.²²

Even new doctoral graduates are finding that there has been a significant tightening of the job market in 1970. A number of factors are influencing this situation, including continued expansion in the supply of new doctoral graduates, the decreasing "brain-drain" from Canada and, finally, an increasing number of doctoral graduates who are non-Canadians seeking employment in Canada.

While it is unlikely that many of these doctoral graduates will remain unemployed, it is increasingly clear that they may well be under-employed. The questions here are complex and call for a separate study of the whole issue of doctoral candidate production and employment in Canada. Among the

problems to be examined are the possibilities for creating new employment opportunities in Canadian society for such doctoral graduates, the relationship of our present immigration policy to the question, and the suitability of the type of training received by doctoral candidates in various fields at this time.

These quite recent commentaries reflect a growing awareness that there is a problem in the employment of university graduates. The range of discussion suggests that the problem is a general one affecting both undergraduate and graduate degree holders. A major limitation of the pertinent material available at this time, however, is a lack of hard data on how different types of university graduates are faring in the labour market.

It is our contention that it is important not to view the linkage between systems of post-secondary education and the labour market as being in any sense simplistic. On the other hand, it is important to avoid studies that are too specifically focussed on a particular population; such studies are not useful for forming generalizations. The present study attempts to achieve an optimal balance between the extremes of generality and specificity. We are limiting ourselves to undergraduate degree holders with either B.A.'s or B.Sc.'s but this category in itself is a broad one and affords much opportunity for comparisons and examinations of variations within the population. A study such as this can then be repeated with other segments of the educational

system-labour market linkage, for example, holders of graduate degrees.

In short, we contend that the most desirable strategy for gaining an understanding of the linkage between systems of post-secondary education and the labour market is to build up systematic and comparable bodies of data pertaining to different identifiable aspects of the situation rather than attempting to make general pronouncements on the basis of impressionistic data. An overall strategy for a systems approach to education and the labour market would include at least the following three steps: (1) careful evaluation and synthesis of existing knowledge about educational systems, the labour market, and the linkage between the two; (2) the carrying out of carefully designed specific studies dealing with particular areas of the educational system-labour market linkage, such as the B.A. and B.Sc. university undergraduate population and the holders of doctoral degrees; (3) the development of creative policies addressed to the resolution or amelioration of these problems.

In Chapter II, we proceed to a more detailed discussion of the design of the present study and how it attempts to advance knowledge in this area in a systematic way. Before proceeding to this discussion, however, we will briefly examine some of the general trends of change to be observed in systems of post-secondary education and the labour market in Canadian society in recent years. This discussion will

serve as a general backdrop to the more detailed study which is the principal concern of this report.

B. Trends in the Labour Force and Post-Secondary Education

This section provides a brief review of some of the general processes of change and development in the Canadian labour force and post-secondary education in recent years. The goal, then, is not an exhaustive review of these areas but rather is to provide some indication of the general context within which we examine our more specific concern with a particular aspect of the educational system-labour market linkage.

1. The Changing Labour Force

A number of general statistical profiles of both the American and Canadian labour force illustrate the various changes in structure and composition that have occurred over the past few years.²³ These general trends have included the growth of the professions, the upgrading of skill levels in general, the growth of the white collar sector, and the shrinkage of jobs in the low skill or labouring categories as well as the shrinkage of the agricultural sector. In Canada, more specific studies by Meltz²⁴ and Ostry²⁵ have recorded and analyzed patterns of educational upgrading in the Canadian labour force. Both of these studies present data which clearly illustrate the trend that, as time goes by, the Canadian labour force is becoming educationally upgraded. This upgrading process is more conspicuous in some occupational categories than others. In general, the greatest

gains in educational upgrading have been made at the white-collar level, particularly at the "managerial level." The professions still retain the highest proportion of the educated within a system occupational category although the continued rate of educational upgrading in the professions has been slower overall than for the managerial category.²⁶

While these studies provide us with some guidelines concerning the changing educational requirements associated with the labour market, they are not sufficiently specific to permit the association of given types or units of education with specific jobs or job categories. Thus, on the basis of such studies, it is not possible to say if the educational upgrading of the occupational category "manager" means that a greater demand is thereby generated for, say, university graduates in business administration. In sum, then, studies such as those conducted by Meltz and Ostry provide evidence to suggest that increasing educational qualifications will be associated with most jobs. However, when we wish to understand the linkage between education and jobs in more specific terms or for a more specific population such as university undergraduate degree holders, then more specific studies must be carried out within the general framework.

Just as the educational requirements associated with jobs change over time, so do the patterns of supply and demand associated with jobs change over time. A major approach to the estimation of future demand in given

occupational categories is manpower forecasting. In the simplest terms, manpower forecasting involves extrapolating a past trend into the future under a given set of assumptions.

Clearly, such a procedure is not without risks. In an analysis of projections of the demand for engineers in Canada and Ontario, Skolnik and McMullen observed that: "These projections are based on the extrapolation of past trends and as such, they do not take account of major structural changes in the factors affecting the demand for engineers. One such factor may be the development and rapid expansion of the colleges of applied arts and technology and corresponding increased availability of technologists and technicians who might be substituted for engineers in some positions."²⁷

In addition to unforeseen structural changes, the assumptions under which forecasts are made may simplify or otherwise distort empirical reality. In A Projection of Manpower Requirements by Occupation in 1975: Canada and Its Regions, B. Ahamad notes:

At the outset, it should be noted that the projections are based on a number of assumptions, which are often not explicitly stated, and that it is possible to derive reasonable alternative projections simply by changing some of these assumptions. In addition, the basic data used in making the projections are subject to unknown errors, some of which may be quite large. Because

of this, the projections will probably need to be revised from time to time as better data become available.²⁸

Some of the major limits and uses of manpower forecasts are succinctly put by Watson and Butorac:

All these (forecasts) share certain characteristics. All produce highly unreliable figures, if one is concerned with specific figures for any time point. They are roughly accurate for trend, and when rounded their calculations are useful. However, with the present state of the art, predicting future requirements of any nature is primitive. Skill and reliability can only be developed, in our opinion, by engaging constantly in this work, producing many sets of calculations by a variety of methods, and comparing and adjusting them over the years. All methods require detailed statistical data which do not exist in Canada.²⁹

In short, the present state of the art in manpower forecasting does not permit the making of extremely reliable projections. Nonetheless, manpower forecasting does permit the making of general predictions with regard to changing patterns of supply and demand in the labour force and, as such, is valuable.

Despite limits, then, studies of the manpower forecasting kind have yielded a number of general predictions about the

future structure of the Canadian labour force. In 1968, Meltz and Penz conducted a study design to project Canada's manpower needs for 1970 using data from 1961 as a base line. Their major findings are that ". . . the most outstanding characteristics of the projections of the occupational groups are the relative increases of professional and clerical workers, the rapid growth of the industries intensively using service occupations, the increasing relative utilization of managers in nearly all industry divisions, the declining relative use of labourers in the secondary industries, and the contraction of employment opportunities in the primary industries."³⁰

In the national projections carried out by Ahamad, the following observations are made in the section dealing with required manpower inflow for the period 1961-1975:

. . . that the required manpower inflow is projected to be largest for craftsmen, production process and related workers. Professional and technical occupations are the next highest, followed by service and recreation occupations and clerical occupations. In all the primary occupations, except miners, quarrymen and related workers, the required manpower inflow is negative, indicating a net outflow of manpower; once again, this is largest for farmers and farm workers. These trends are evidently quite congruent with the labour force trends depicted in other studies.³¹

A study by Watson and Butorac used 1961 as a base year and projected manpower requirements within various occupational categories to 1986.³² The projections by Watson and Butorac differ from those of Meltz and Penz and Ahamad in that they are for the province of Ontario only. Table 1:1 is reproduced from the study by Watson and Butorac and provides data on compound annual rates of growth in various professional and technical occupations in Ontario for the period 1951-1986. A number of interesting trends are to be observed in the table but, in particular, it should be noted that beginning in 1971, projected growth rates begin to taper off for such occupations as secondary school teaching, elementary school teaching, librarianship, and social welfare workers. These fields, particularly the teaching fields, have in the past been major consumers of university undergraduate degree holders.

In conclusion, it is suggested that the manpower forecasting approach is useful for depicting in rather gross terms trends in the labour market. These trends may be related, again in a rather gross way, to trends in the supply of educated persons with the result that the general dimensions of the labour market-educational system linkage may be identified.

Table 1:1

Compound Annual Rates of Growth in Professional
and Technical Occupations, Ontario, 1951-86 (%)

Occupation	1951-61	1961-71	1971-81	1961-86
Professional engineers	4.00	3.43	3.25	3.23
Architects	4.34	5.08	4.39	4.60
Surveyors	..	4.24	4.00	4.00
Technicians	..	3.53	3.56	3.56
Draftsmen	..	3.50	3.57	3.55
Physical scientists	..	4.43	4.52	4.50
Biologists and agricultural professionals	..	3.09	3.15	3.16
Professors and college principals	9.65	12.47	6.58	8.33
Secondary school teachers	8.33	8.48	1.47	4.02
Elementary school teachers	6.05	2.10	1.49	4.62
Teachers and instructors, n.e.s.	..	3.00	3.00	3.00
Librarians	4.84	4.75	3.97	4.32
Physicians and surgeons	4.13	2.64	2.85	2.76
Dentists	1.58	3.39	3.71	3.61
Pharmacists	..	3.13	3.39	3.31
Osteopaths and chiropractors	1.49	1.49	1.48	1.51
Optometrists	..	1.32	1.17	1.22
Nurses, graduate	6.07	2.45	2.85	2.89
Nurses, in training	4.16	3.25	2.85	3.02
Dietitians	4.85	5.02	5.00	5.00
Physiotherapists	..	7.10	3.44	4.89
Occupational therapists	..	7.09	2.43	4.03
Medical laboratory technicians	..	3.26	2.50	2.80
Radiological technicians	..	3.23	2.50	2.80
Medical record librarians	..	3.99	3.99	3.99
Medical social workers	..	6.01	4.74	5.18
Dental hygienists	..	21.90	9.15	13.93
Dental technicians	1.38	3.42	3.67	3.62
Other health professionals	..	5.97	4.81	5.22

Table 1:1 (Cont.)

Occupation	1951-61	1961-71	1971-81	1961-86
Lawyers and notaries	3.85	3.49	3.93	3.75
Clergymen and priests	1.90	1.50	1.25	1.35
Brothers and nuns	4.14	1.50	1.24	1.35
Other religious workers	3.16	1.00	0.99	1.00
Commercial artists	3.39	3.39	3.50	3.46
Other artists and art teachers	8.56	6.48	4.48	5.18
Authors, editors and journalists	6.05	4.75	3.75	3.99
Musicians and music teachers	3.28	2.25	2.00	2.10
Accountants and auditors	-0.68	-0.61	-0.62	-0.61
Actuaries	5.01	7.00	7.10	7.00
Statisticians	13.44	9.00	6.50	7.39
Economists	..	5.99	6.00	6.00
Computer programmers	..	27.61	4.01	12.69
Social welfare workers	7.42	4.74	3.75	4.00
Professionals, n.e.s.	..	3.00	3.00	3.00
Total (growth rate averages)	5.56	3.94	2.98	3.33

Source: C. Watson and J. Butorac, Qualified Manpower in Ontario, 1961-1986 (Toronto: O.I.S.E., 1968), 293.

2. Change and Development in Canadian Post-Secondary Education

The decade of the 1960s in Canada was a period of rapid growth for post-secondary education. An increasing proportion of Canada's young people are to be found in schools and universities. A growing proportion is involved in post-secondary education and there has, in general, been a widening of educational options available and an upgrading of the teachers and facilities associated with such options. As the Canadian society continues to industrialize and modernize, demand for technical competence and higher levels of knowledge continues to increase, particularly apparent from our earlier discussion of educational upgrading in the Canadian labour force. The post-war baby boom, of course, also served to increase the number of young people consuming educational services during the decade of the 60s. In addition, the cold war and frequent news of Soviet technical and scientific achievements served to generate an ambiance in which education and educational development were felt to be vital to maintain the Western democratic way of life. The latter ideology was perhaps more pervasive in the United States than in Canada but it cannot be denied that it influenced the development of post-secondary education in Canada.

Table 1:2, taken from a study by Zsigmond and Wenaas,³³ shows the dramatic increase in full-time enrolment between 1951 and 1968 for all forms of post-secondary education in Canada. In addition to the increase in student numbers, the

Table 1:2

Record and Prospects of Post-Secondary Full-Time
Enrolment, Canada, 1951-52, 1967-68, 1980-81

	Actual		Projected
	1951-52	1967-68	1980-81
University	63,000	261,000	750,000
Non-University			
Teachers Colleges	8,000	23,000	.. ^a
Nurses Diploma Courses	15,000	24,000	31,000
Technical Institute and Community Colleges	4,000	64,000	349,000
Total Non-University			
Including Teachers Colleges	27,000	111,000	380,000 ^a
Excluding Teachers Colleges	20,000	88,000	380,000
Total	91,000	372,000	1,130,000

^a By 1980-81, enrolment in teachers colleges has been projected as nil because it was assumed that teachers colleges would be fully amalgamated with universities by that time. Enrolment in such teachers colleges as might be in existence in 1980-81 would be regarded as included in the projection of university enrolment.

Source: Z.E. Zsigmond and C.J. Wenaas, Enrollment in Educational Institutions by Province, 1951-52 to 1980-81 (Ottawa, Economic Council of Canada, 1970), 29.

table also illustrates the dramatic rise of community colleges across Canada. The trend toward continued growth and expansion, with the exception of the separate teachers colleges, is clearly reflected in the figures under the 1980-81 projection offered by Zsigmond and Wenaas in the table. As for Ontario, Table 1:3, taken from Watson and Quazi's Ontario University and College Enrollment Projections to 1981/82³⁴ shows that, based on the trend of the past five years, full-time university undergraduate enrolment will be 27.90 per cent of the 18-21 age group in 1981.

In addition to such indications of continued growth in the supply of individuals with university undergraduate degrees, it is also important to remember that the colleges of applied arts and technology are also exhibiting continued growth.³⁵ While the community colleges are not a direct concern of this report, it must be remembered that at least a proportion of their graduates will come to compete in the labour market with university undergraduate degree holders. The exact extent to which employers may come to substitute community college graduates for university undergraduate degree holders is unknown. Data in this area need to be gathered.³⁶ However, the increasing number of community college graduates is a factor that cannot be ignored.

In part, continued growth in the post-secondary education sector may also be expected as the barriers or impediments to entering programs of post-secondary education are broken down. Although there are differing views about the extent

Table 1:3

Undergraduate Enrolment in Ontario (Based on Trend
of Past Five Years: Full-time Undergraduate
Enrolment as a Percentage of 18-21 Age Group)

Academic Year Beginning	18-21 Age Group	Full-Time Undergraduate Enrolment	Enrolment as a % of 18- 21 Age Group
1968	484,450	77,000	15.90
1969	484,300	84,800	17.50
1970	491,520	92,900	18.90
1971	506,930	101,900	20.10
1972	529,620	111,700	21.10
1973	551,410	121,300	22.00
1974	578,120	132,100	22.85
1975	596,040	141,000	23.65
1976	613,640	149,700	24.40
1977	630,780	158,300	25.10
1978	639,530	165,000	25.80
1979	651,150	172,600	26.50
1980	664,500	180,700	27.20
1981	670,110	187,000	27.90

Source: C. Watson and S. Quazi, Ontario University and College Enrollment Projections to 1981-82 (Toronto, O.I.S.E., 1969).

to which access to post-secondary education is being equalized, there is little doubt that programs of financial assistance such as the Ontario Student Awards Program have served to place post-secondary education within the reach of a greater proportion of the population. The more complex debate surrounding the access question is summarized in a recent paper by the present author and Lorna Marsden.³⁷

A further trend of change within the post-secondary educational sector which has implications for the educational system-labour market link is the trend toward increasing generalism in university curriculum.³⁸ Basically, the present trend in university curriculum may be summarized as being increasingly away from set courses and sequential requirements toward a more liberal and diverse system in which the individual student has greater choice.

While it is doubtful if one can argue that university training in Ontario was ever strictly vocational in character, it is nonetheless possible to identify earlier conditions under which the content of university degrees was much more oriented toward vocational requirements. At the University of Toronto, for example, the honours bachelor degree with its emphasis upon taking a great many courses in a single core area represented a pre-professional training program. Such concentrated programs, however, became less relevant with the systematic upgrading of qualifications required in the various occupational fields to which such programs were

related. The trend toward greater curriculum generality emerges most clearly in arts and science university programs and gives every indication of being likely to continue.

Viewing the vocational implications of education from the employer's side, the proposition that increasing levels of education result in increased vocational capacities is extensively questioned by Ivar Berg in Education and Jobs: The Great Training Robbery.³⁹ Berg's study is based on a wide range of American data. Among the major findings he sets forward are: (1) there is a growing number of workers who have more education than they need to perform their jobs well, in some cases more than the employers themselves regard as desirable; (2) salaries are not necessarily related to education, many teachers and social workers, for example, earn less than plumbers and professional athletes; (3) an employee's productivity does not vary systematically with his years of formal education particularly when experience is taken into account; (4) the rate of turnover is positively associated with high education; (5) upper and middle level employees are not the only ones who are over-qualified for their jobs; among workers in lower skilled jobs, dissatisfaction was found to increase as educational levels rose; (6) better educated employees are often rated as less productive; (7) the practice of basing teachers' salaries on the credits they get toward higher degrees actually encourages teachers not to teach since those who feel over-trained tend

to seek administrative positions or better-paying jobs in industry. Furthermore, this practice impedes the upgrading of teacher qualifications by guaranteeing schools of education a steady supply of students, thereby relieving them of pressure to offer better courses; and, finally, (8), in the armed forces, it was found that high school graduates were not uniformly and markedly superior to non-graduates and that training on the job was more important than educational credentials.

To question the vocationally specific component of higher education, however, is not necessarily to suggest that such education somehow lacks relevance to daily life and work. It is perhaps an indication that we need to replace the term "vocationalism" with some broader term such as "life skills." In discussing the general relationship between the economy and the educational system in the United States, Trow observes:

The gains of special relevance to economic growth are not merely the technical skills acquired in schools, but perhaps of increasing importance, in adaptability to new circumstances, and in general, capacities for solving problems and initiating action. We can only get an adequate appreciation of the characteristics of educated men when we reflect on the conservatism, rigidity, and passivity that is characteristic of people with very

little formal education, especially in their relations to the formal institutions of the society.⁴⁰

Trow further argues that:

What mass higher education can do, and is already doing, is to enable the American people to recognize and then deal with the problems of a complex, bureaucratic society: individually, by providing men with the flexibility to modify their life plans in a rapidly changing society--to roll with the punch, so to speak, by enabling them to perceive the need for changes in public responses to such problems as urban renewal, race relations, public welfare, mental health--to the host of problems that arise or become more acute with the growing complexity and inter-dependency of our society.⁴¹

In an important sense, then, these comments point to some of the non-economic benefits to be derived from higher education. A major problem in educational research and policy-making at the present time is that these non-economic benefits, although of increasing importance, are immensely difficult to measure.⁴² Such problems of measurement will have to be at least in part resolved before it will be possible to discuss in a meaningful fashion what the various component parts of higher education might be and how these

component parts would relate to different orders of social goals.

Summary

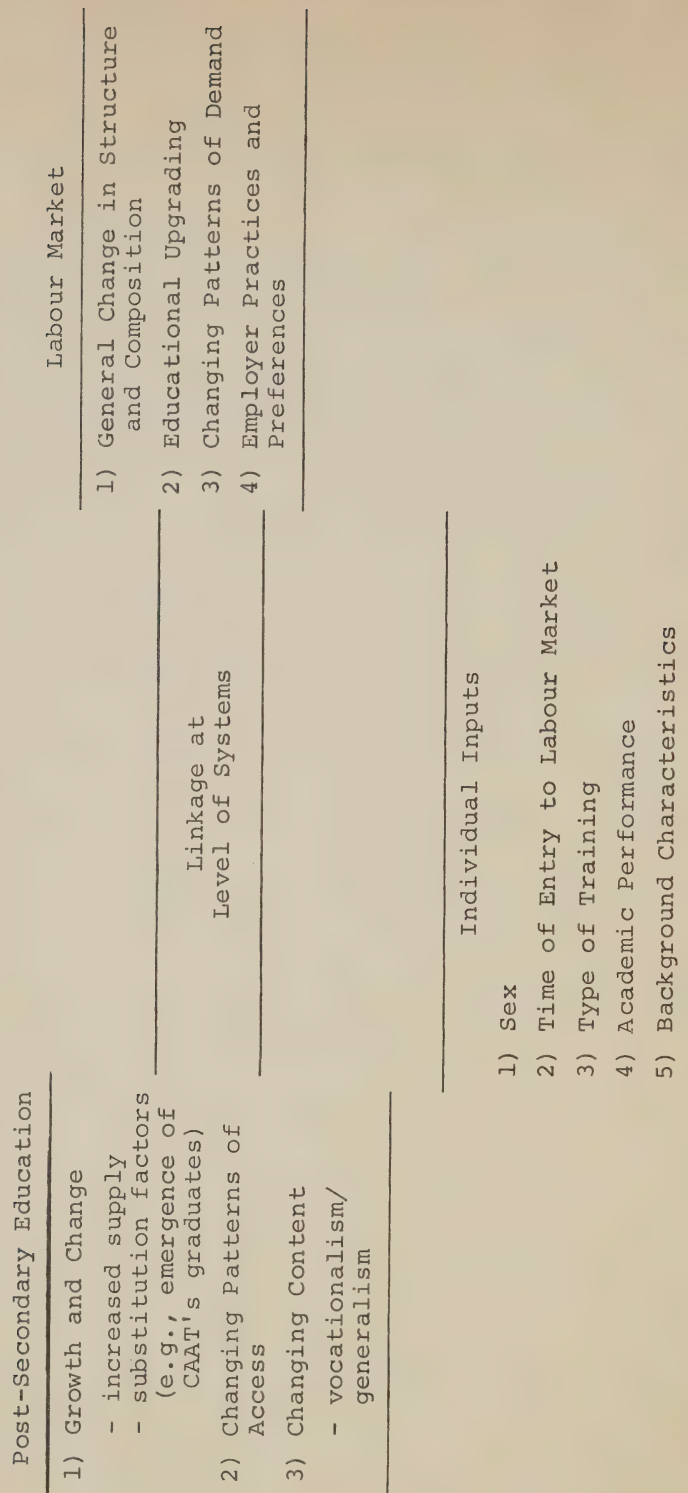
Figure 1:1 attempts to summarize the general theoretical framework in terms of which this study has been approached. In this chapter, we have argued that the linkage between higher education and jobs is becoming increasingly problematic. We have suggested that the most effective way of assembling systematic data with regard to this problem is to design studies that are neither too general nor too specific but which bear upon strategic parts of the educational system-labour market linkage. It is contended that the present study of B.A. and B.Sc. graduates represents such an approach.

We have also discussed some of the general trends of change in both Canadian post-secondary education and the labour force. Our comments are by no means intended as an exhaustive analysis of either of these two complex systems but rather as an attempt to identify some principal themes which will serve as general background to the ensuing specific analysis.

In discussing the educational system, for example, we refer to such patterns as continued growth and change in the anticipated outcome of an increased supply of individuals holding university undergraduate degrees. The emergence and growth of the colleges of applied arts and technology was also referred to with specific reference to the fact that

Figure 1:1

Overall Field of Social/Economic Forces



this may have implications for new patterns of competition in the labour market which will affect university undergraduate degree holders. Changing patterns of access to higher education and the changing content of higher education were also referred to.

With regard to the labour force, a number of trends were examined including overall patterns of change in structure and composition, the educational upgrading of the labour force, changing patterns of demand and the attempts made by manpower forecasters to cope with these. Another factor that must be taken into account is employer practices and preferences. On the basis of impressionistic data, we believe that employers are placing more emphasis on providing in-house programs of training rather than looking to the university undergraduate degree holder as a vocationally trained person. However, lack of data in this area limits the extent to which we are able to make informed judgements.

As depicted in Figure 1:1, these and other general structural features of the educational system and the labour market interact to determine the structure and nature of the linkage between the two systems. It is at this point that the individual university undergraduate degree holder enters the picture. To a large extent, the experience of the graduate is influenced by the structural nature of the linkage. However, as he moves from one system to another, many of the individual outputs he brings to the situation

influence how he experiences the linkage. Thus, in times of a tight market, certain types of training may be preferred over others, or employers may give preference to graduates with higher academic standards. Men may find it easier to obtain a higher level position than women and their promotion and salary prospects may be better.

We are not suggesting that the structural linkage between the educational system and the labour market determines entirely the experience of the individual. Indeed, there are obviously a number of variations in terms of different types of individual background characteristics and training. It is the major purpose of this study to discover how B.A. and B.Sc. graduates fare in the labour market. In addition, we are concerned to discover the sources of variation within this population, that is, how do different types of B.A. and B.Sc. graduates fare within the labour market.

This, then, constitutes the general theoretical framework of the study. In Chapter II, we proceed to a more detailed discussion of the specific study design.

Footnotes

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- 2 Seymour Harris, The Market for College Graduates (Cambridge, Mass., Harvard University Press, 1949).
- 3 For an even earlier historical account, see W.M. Kotschnig, Unemployment in the Learned Professions (London, Oxford University Press, 1937).
- 4 Marjaleena Repo, Who Needs the Ph.D.? (Toronto, University of Toronto Graduate Student Union, 1970).
- 5 Statistics provided in private communications (Toronto, School of Graduate Studies, University of Toronto, April, 1970).
- 6 Statistics provided in private communications (Toronto, School of Graduate Studies, University of Toronto, November, 1970).
- 7 Ivars Peterson and David Kane, "The Jobless Science Grad," Synthesis, 2, No. 1, (1970).
- 8 Ibid., 3.
- 9 Ibid., 7.
- 10 Association of Universities and Colleges of Canada, University Affairs, 12, No. 2 (1971).
- 11 Ibid., 2.
- 12 Ibid.
- 13 Ibid.
- 14 Ibid., 3.
- 15 Ibid.

- 16 Ibid., 9.
- 17 Ibid.
- 18 Ibid.
- 19 Ibid.
- 20 Ibid.
- 21 Canada Department of Manpower and Immigration, Supply and Demand 1970: New University Graduates (Ottawa, Queen's Printer, 1970), 11.
- 22 Ibid.
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- 24 Noah M. Meltz, "Changes in the Occupational Composition of the Canadian Labour Force, 1931-1961". Occasional paper No. 2, Economics and Research Branch, Department of Labour (Ottawa, Queen's Printer, 1965).
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- 27 M.L. Skolnik and W.F. McMullen, An Analysis of Projections of the Demand for Engineers in Canada and Ontario (Toronto, Committee of Presidents of Universities of Ontario, 1970), 23.
- 28 B. Ahamad, A Projection of Manpower Requirements by Occupation in 1975: Canada and Its Regions (Ottawa, Department of Manpower and Immigration, 1969), 1.
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- 30 N.M. Meltz and G.P. Penz, Canada's Manpower Requirements in 1970 (Ottawa, Department of Manpower and Immigration, 1968), 23.

- 31 B. Ahamad, A Projection of Manpower Requirements, 17.
- 32 C. Watson and J. Butorac, Qualified Manpower.
- 33 Z.E. Zsigmond and C.J. Wenaas, Enrollment in Educational Institutions by Province, 1951-52 to 1980-81 (Ottawa, Economic Council of Canada, 1970).
- 34 C. Watson and S. Quazi, Ontario University and Course Enrollment Projections to 1981/82 (Toronto, O.I.S.E., 1969).
- 35 L. Rachblis, "Intake 60,000: Ontario's Community College System," Canadian Vocational Journal, January, 1970.
- 36 The earlier mentioned study of engineers by Skolnik and McMullen represents a beginning move in this direction but relates to one job market area.
- 37 E.B. Harvey and L.R. Marsden, "Access to Post-Secondary Education in Ontario: Some Influences of Social Class and Sex," forthcoming in Interchange.
- 38 See, for example, the Presidential Advisory Committee on Undergraduate Instruction in the Faculty of Arts and Science, University of Toronto, Undergraduate Instruction in Arts and Science (Toronto, University of Toronto Press, 1967).
- 39 Ivar Berg, Education and Jobs.
- 40 P.M. Trow, "Education and the American Occupational Structure". Paper read as part of a series on The Impact of the Modern World in Education (Berkeley, 1963), 21.
- 41 Ibid., 24.
- 42 For a useful discussion of this question, see A. Peacock and J. Wiseman, "Principles of Educational Finance in Developed Countries", in M. Blaug (ed.), Economics of Education, 2 (Middlesex, England, Penguin Modern Economics Readings, 1969), 343-81.

Chapter II

Study Methods and Data Base

Introduction

In this chapter, the study methods and data base of the research are outlined in three sections.

The first section reviews a number of alternative strategies for studying the relationship between educational and occupational life experiences. The comparison of these methods leads to the rationale for the particular study method selected for this research, that is, historical cohort analysis.

The second section outlines the techniques by which the data were gathered and analyzed with particular reference to the procedures followed in developing the questionnaire, obtaining a representative sample, and maximizing response.

Finally, the third section summarizes the principal questions to which the research was addressed, including:

- (1) Do more recent graduates find their education less relevant to their occupation than their earlier counterparts?
- (2) Are any trends to be observed in the types of fields studied by undergraduate degree holders?
- (3) What are the major patterns of financial support for university undergraduate degree training now as opposed to ten years ago?
- (4) Are more recent graduates more likely to have been part-time or full-time students than their

earlier counterparts?

- (5) Are recent graduates more likely to enter post-graduate training than their earlier counterparts and, if so, how do they finance such training?
- (6) To discover if more recent graduates have more difficulty obtaining jobs after graduation than their earlier counterparts.
- (7) To discover if more recent graduates obtain lower status jobs upon graduation than their earlier counterparts.
- (8) To discover which methods of job seeking were found most effective by university graduates and how these patterns have changed over time.
- (9) To discover if there have been any shifts over time in the types of major employment sectors where university undergraduate degree holders obtain jobs.
- (10) To obtain information on any experiences with unemployment our respondents may have had.

Each of these questions, of course, implies a number of subsidiary questions and does not represent a complete accounting of the goals of the research. It does, however, serve to point out the major questions or areas to which the research was directed.

A. Strategies for Analyzing Educational System-Labour Market Linkages

In order to evaluate our thesis that there is a growing disjunction between the labour market and the educational system, particularly that part of the educational system given over to university general arts and science training, it is necessary to consider some of the strategies for conceptualizing the linkage between the two systems. Accordingly, five such strategies will now be reviewed and our rationale advanced for selecting a particular method of proceeding.

1. Structural Focus

As we employ the term, the structural focus calls for an identification of different structural features of both the educational and the labour market systems with the end in view of discovering the linkages that obtain between such structural features. Thus, for example, one might identify the content of a particular educational program and try to link this up with the training requirements of a particular occupation or occupational group. We consider this approach to be of limited utility for a number of reasons. First, given the complex nature of the systems in question, it is difficult to establish very precise linkages between different structural features. Second, in complex systems

there is a tremendous amount of interaction between the component parts of the system. This renders it extremely difficult to identify discrete input or output linkages between any two given systems. Third, there are serious data gaps which make the whole enterprise questionable. The absence, for example, of a systematic study of the practices of Canadian employers means that we lack data on the extent to which such employers place emphasis on skills acquired through education, or, alternatively, in-house training or some mix of the two. Thus while we would contend that structural inventories of large-scale systems are of great importance in identifying general trends and providing background to more specific analyses, we do not feel that it is at this level of generality that the issue of systematic linkages can be most fruitfully pursued.

2. The Supply and Demand Forecasting Approach

In Chapter I, manpower forecasts were discussed and supply forecasts were dealt with in terms of educational enrolment projections. We have already referred to the limits and merits of the forecasting approach. It remains to be said here that we do not think it presents a useful technique for obtaining a very precise grip on the nature of the linkage between the educational system and the labour market. This is so for a number of reasons. First, as we have pointed

out earlier, such projections are frequently based on different or otherwise incomparable assumptions. Second, the existing technology of supply and demand forecasting is such that the end products are highly likely to be rather gross estimates. Third, we simply do not know enough about how different types and units of education link up with different sorts of occupational requirements. The link between education and jobs is neither precise nor random. As we shall argue, the analysis of the linkage between education and jobs calls for the involvement of variables not normally subsumed by the projection approach.

3. The Cross-Sectional Approach

The cross-sectional approach to the study of the linkage between educational systems and the labour market would involve taking a sample of persons in a given occupation or group of occupations and then attempting to learn more about how their past education relates to what they are presently doing. Probably the most important Canadian study of this type is to be found in the recent publication of the Department of Manpower and Immigration, Canada's Highly Qualified Manpower Resources.¹ This report is based on a 1967 study of some 91,000 scientists and engineers in Canada. This survey gathered substantial information on the educational background and occupational experiences of respondents as well as gathering standard demographic data such as age,

sex, marital status, citizenship and so on. The major report resulting from the survey assembles a considerable amount of basic information on highly qualified manpower in Canada including the characteristics of highly qualified manpower in Canada and the flows of highly qualified manpower. A section of the report is given over to assembling basic information on scientists and engineers. Another section is concerned with health, law and education manpower. Without in any way detracting from the general excellence of this study or the valuable data base line it provides, it must nonetheless be observed that it shares the problem common to all cross-sectional research, that is, it presents a "snap-shot" of a state of affairs at a given point in time. It provides information on how different types of highly qualified manpower are deployed in the labour force. What it cannot do is identify those variables and their operation that have led to the observed deployment. This may or may not be a serious problem depending upon one's concerns. If one is primarily interested in discovering how and where highly qualified manpower is deployed in the labour force, the study is highly suitable to these purposes. If one is more concerned with investigating the changing linkages between educational systems and the labour force, the study lacks the trend or longitudinal focus that would facilitate this. This is not to say, of course, that it would not serve as a valuable base line for further studies of highly qualified manpower in Canada.

4. Longitudinal Studies

Without question, the most effective means of studying the linkage between the educational system and the labour market is through the method of longitudinal research. Ideally, one would first interview students in their early years of university and ascertain their occupational expectations and aspirations. Detailed data could also be gathered on the types of vocationally relevant training they received. The same students would then be followed up after they entered the labour market. Data would be gathered on the kinds of jobs they obtained, the degree of difficulty they experienced in obtaining such jobs, and the extent to which they felt that their educational preparation had been adequate or inadequate in preparing them for the world of work.

The research strategy in such a case is that of using the experience of the individual or a number of individuals as a means of analyzing and understanding the inter-relationships between two large-scale systems within the society, in this case the educational system and the labour market. Such a form of analysis can tell us a great deal about the nature of systemic linkages. However, it does not tell us everything. Therefore it is of considerable importance that such an approach be supplemented by an analysis of the structures themselves, as well as the individuals who pass through such structures.

Unfortunately, the kind of longitudinal research referred to is not carried out very frequently. There are a number of reasons for this, but perhaps the two major reasons are, first, that it is exceedingly expensive and, second, that it is often difficult for researchers to commit the considerable periods of time demanded by the longitudinal design.

Strictly speaking, there are no Canadian studies that qualify as longitudinal analyses of linkages between the educational system and the labour market. One study that comes closest, the Atkinson Study, was based upon an investigation of 9,573 students enrolled in Grade 13 in the public and private secondary schools of Ontario in 1955-56.² Dr. R.W.B. Jackson, in the preface to the first report of this research, described the study as follows:

The Atkinson study of utilization of student resources is an analytical survey designed to identify intellectual, personal and background characteristics of a large group of Ontario Grade 13 students, and to follow the careers of these students for a period of two years after the completion of the Grade 13 year in school, in order to evaluate their success in university courses, in other kinds of further education, and in employment. Inter-relationships between basic information and follow-up data should lead to the discovery of more effective means of predicting

success or failure in various fields of endeavour.

This information will facilitate sound guidance for young people in their choice of careers.

Universities and other educational institutions will have a basis for improving their admission policies.³

As may be seen from this description, the Atkinson study was concerned with the following-up of Grade 13 students and would therefore appear to be outside our concern with the university educational system. However, it should be pointed out that if students can be followed up in two years time, as they were in the Atkinson study, then they can also be followed up in ten years time, after which time a proportion of them will have completed university training and proceeded into the labour market. Regrettably, we have only been able to discover one further follow-up use of the Atkinson data. This is a study by W.A. Cruikshank and T.J. Wigney entitled "A Follow-up Study of Atkinson Students Who Became Secondary School Teachers."⁴

While this study gives us some data on the social characteristics of those students who chose secondary school teaching as a career, it provides no information on the extent to which they did or did not find their university training a useful preparation for this type of work.

Longitudinal studies such as the Atkinson study provide an invaluable base for continuing longitudinal work. The Cruikshank and Wigney study, however, represents the only

further utilization of the data and, at the present time, it does not appear that the original data still exist.

The Carnegie study is another Canadian longitudinal study to be noted. However, as may be seen from the description below, the study is not addressed to the university educational system or labour market experiences.

During 1959-60, the 90,719 Grade 9 students enrolled in virtually all of the secondary schools in Ontario, both public and private, were given a battery of tests and questionnaires, with a view to estimating Ontario's future human resources through the measurement of their aptitudes, interests and personality characteristics. In succeeding years, the pattern of testing was repeated until the students completed high school; there is now a 12-tape data bank containing a record of the progress of these 90,719 students over their high school years.⁵

These data represented an exceedingly useful analysis of high school students over the period in question. However, none of the students were followed up past Grade 12.

The absence of Canadian longitudinal studies led to an exploration of other literature. The result of this investigation was a detailed examination of three studies conducted in the United States.

In 1957, all high school seniors in Wisconsin were surveyed concerning their educational and occupational aspirations and

a number of potentially related topics. In 1964, Professor W.H. Sewell of the University of Wisconsin carried out a follow-up study of a random sample of 10,321 of these students. As Sewell puts it, "the purpose of the follow-up study was to obtain information on the educational and occupational attainments of the students since high school graduation."⁶ To date, however, Sewell has focussed almost exclusively on the data pertaining to educational attainments and, in consequence, his study did not provide immediately useful guidelines to our own. Nonetheless, the conduct of this study has not been uninfluenced by Sewell's procedures, particularly with regard to the follow-up procedures he used. Specifically, Sewell used two mailed follow-ups and, where those failed, turned to telephone follow-ups as the last resort.

The second American study we examined in detail was the 1970 monograph Education and Employment by L.M. Sharpe.⁷ The population on which Sharpe's study is based is all June, 1958 graduates from all four-year degree-granting colleges and universities in the United States. Names and addresses of 55,396 B.A. and first professional degree holders were obtained from 1,244 schools. In addition, names and addresses were obtained for 10,996 holders of M.A.'s and second level professional degrees from the same schools. Unfortunately, Sharpe provides no data as to what sort of return rate these figures represent relative to the total

population. In any event, Sharpe proceeded in 1960 to send mailed questionnaires to all the individuals for whom she had names and addresses. Her response rate was approximately 65 per cent. A further follow-up study by means of mailed questionnaires was conducted in 1963 with a stratified sample of 23,309 cases drawn from the respondents to the 1960 survey. This second phase of the study obtained an 83 per cent response rate.

Sharpe found that five years after graduation, 91 per cent of male respondents and 50 per cent of female respondents were employed full-time. Females tended to become teachers almost regardless of their undergraduate major. Males, followed up two years after graduation, were almost likely to be teachers. However, in the second follow-up five years after graduation, the category "business" emerged as the major employer of males. In general, the graduates responding to the questionnaire found their education more relevant to their jobs in 1960 than in 1963. It should be noted, however, that the only method of analysis employed by Sharpe is relatively simple cross-tabulations without the use of statistical procedures that would help the reader evaluate the significance of the findings.

The value of Sharpe's study is limited by virtue of the rather simple methodology employed and, of course, by the fact that the findings are now somewhat out of date. However, an examination of Sharpe's research design proved

helpful in designing our own approach and, in particular, avoiding pitfalls associated with this kind of research. Also, six of Sharpe's questions relating to university graduates' attitudes toward their education were adapted for the present survey.

The final American study we examined was a longitudinal study of 1961 college graduates carried out under the auspices of the National Opinion Research Centre at the University of Chicago. A sample of 41,000 1961 graduates from 135 colleges and universities were sent self-administered questionnaires once a year from 1961 through 1964.⁸ "In 1968, 6,000 of the 20,000 who had returned all four earlier questionnaires were sent a fifth one. The response rate of this wave was 81%. The first four waves of the study were largely devoted to career plans, career development, and job characteristics."⁹

The substance of this particular study was not directly applicable to the problem we are examining in a Canadian setting. Nonetheless, an examination of the general methodology employed in the NORC study provided helpful guidelines in the development of our own study design. In particular, the questionnaires used in the NORC study were examined in detail and influenced our decision to include attitudinal measures as well as purely objective measures in our own questionnaire.

We now proceed to a discussion of the actual design used in the present research, that is, historical cohort analysis.

5. Historical Cohort Analysis

This approach is similar to cross-sectional analysis in that the data are all taken at one point in time. However, an attempt is made to simulate the longitudinal dimension by sampling cohorts of individuals who have passed through a common experience at different points in time. Thus in this particular study we have followed up individuals who graduated from university in 1960, 1964 and 1968. One of our major concerns will be to determine the extent to which the employment opportunities and experiences of the 1968 graduates differ from the graduates of other years. It is at this point that we have to note one of the major methodological problems associated with the historical cohort approach. That is, assuming we find real differences in the employment opportunities and experiences of 1968 graduates as compared with, for example, 1960 graduates, the question then is how much of this variation is attributable to the passage of time as compared with, for example, the possibility that 1968 graduates may differ significantly from 1960 graduates and that these differences are the true source of any variations observed. Obviously the longitudinal design controls for this problem in that it is the same individual whom one follows up in, for example, 1960, 1964 and 1968. It is our contention that the historical cohort approach, used with appropriate controls, can enable the researcher to make some informed estimates about the extent

to which observed variations are attributable to differences in individuals as opposed to structural changes over time, such as the changing linkage between the educational system and the labour market. In short, it is readily admitted that the historical cohort approach does not afford the same degree of control and precision that one obtains with longitudinal research. On the other hand, the historical cohort approach is manifestly less expensive than longitudinal research and furthermore permits the more rapid formulation of answers to pressing problems. Furthermore, as we will return to in subsequently analyses, with the use of appropriate caution and control, the findings resulting from historical cohort analysis can approximate quite acceptable levels of reliability and validity.

This, then, has been a resume of the general thinking which went into the overall design of the research. We turn now to a more detailed examination of the data and methods of the research and some specification of the hypotheses guiding the investigation.

B. Data and Methods

This section outlines the principal methods used in the collection and processing of the data used in the study. Attention is given first to questionnaire design and content and follow-up procedures used with respondents. A discussion follows of the sampling frame and response rates obtained. There is a brief description of how the data were coded and, finally, a description of the mode of analysis used in this report.

1. Development of Questionnaire

In order to keep the costs of the study within reasonable parameters, it was decided that a mailed questionnaire would be used with our sample. The questionnaire, reproduced in Appendix 1, was developed after a review of the literature including the work of Sharpe, Sewell and the National Opinion Research Centre. The questionnaire falls into four major sections. The first is concerned with evaluating the attitudes of our respondents toward their educational and occupational experiences; the second section takes a detailed educational history; the third section takes a similar history with regard to the respondents' employment experiences; and the fourth section elicits detailed background information and, in large part, provides the wide range of independent variables used in the subsequent analysis.

The questionnaire has been designed in such a way as to capture the widest range of data possible. In addition, the questionnaire uses a format that is largely structured. Two factors influenced this decision. The first was an attempt to facilitate rapid and accurate completion of the questionnaire. The second was to minimize the possibility for errors of interpretation during the coding process when responses to the questionnaire are transferred to code sheets and subsequently transferred to computer cards and tapes.

The questionnaire was mailed out with an explanatory covering letter. Where necessary, two further mailed follow-ups were carried out. Copies of the initial contact letter and the two follow-up letters are to be found in Appendix 2. Finally, telephone follow-ups were used as a last resort.¹⁰

2. Sampling

The central purpose of our research was to discover more about the changing educational and occupational experiences of a representative sample of university arts and science graduates in Ontario over the past ten years. Our first sampling decision, then, was to make a representative selection of institutions and to decide upon the graduating years to be sampled in order to obtain an adequate overview of the processes of change. With regard to the question of selecting institutions, the following universities were selected on a purposive basis: University of Toronto,

Queen's University, McMaster University, and University of Waterloo. These universities vary in size and the types of populations they recruit and it was felt, in general, that they were reasonably representative of universities in Ontario. We then proceeded to select 1960, 1964 and 1968 as the years in which we would sample the graduates. As may be seen from Figure 2:1, detailed specification is made of institution, years, total numbers of both pass and honours arts and science, by year for each institution, the percentage sampled, the breakdown of the sample size by institution and year, and the pattern of response. As may be seen from the figure, the overall pattern of response is 4,042 cases returned out of 6,316. This represents a response rate of 64.0 per cent which is considered to be highly satisfactory in social survey research of this kind.

Despite the high rate of response, we were nonetheless concerned to ensure that there were no sources of systematic bias caused by non-response. During the telephone phase of our follow-up procedures, we took the opportunity to administer to those refusing to return the questionnaire a very short form of the questionnaire. This short form is reproduced in Appendix 3. An examination of the responses to this short form does not point to the existence of any systematic differences in those individuals who declined to return the questionnaire.

Figure 2:1

Sample Design and Coded Returns

Institution and Years	Total N Arts & Science	% Sampled	Sample Size	Returned	% Return
Toronto					
1960	1,008	70	706	456	64.6
1964	1,627	70	1,139	711	62.4
1968	2,341	70	1,639	935	57.0
Sub-Total	4,976	70	3,484	2,102	60.3
McMaster					
1960	293	70	205	140	68.3
1964	558	70	391	210	53.4
1968	946	70	662	386	58.3
Sub-Total	1,797	70	1,258	736	58.5
Queen's					
1960	303	70	212	147	69.3
1964	474	70	332	244	73.5
1968	786	70	550	422	76.7
Sub-Total	1,563	70	1,094	813	74.3
Waterloo					
1960	8	70	5	1	20.0
1964	160	70	112	49	43.8
1968	519	70	363	116	32.0
Sub-Total	687	70	480	166	34.6
Total	9,023	70	6,316	3,817	60.4

Another 225 questionnaires were included in the analysis which did not have answers to either year of graduation or university from which they graduated. This increases the total number included in the analysis from 3,817 to 4,042 and the response rate to 64.0 per cent.

3. Coding

The data were transferred from the completed questionnaires to Fortran code sheets. This process was carried out by 15 coders who received common instructions but worked independently from one another. In addition, one of the coders was appointed supervisor and carried out random checks of the work of other coders in order to assure a high degree of reliability and consistency in the coding process. The complete code sheets were then used by keypunchers who transferred this data to machine-oriented cards. The results of the keypunching process were checked and verified. Finally, the computer cards were transferred to magnetic tapes for the purposes of computer analysis. Throughout the data processing phase of the project, special attention has been given to measures that would mitigate against random or systematic error in the final results.

4. Design of the Analysis

The ensuing chapters present and discuss the findings of this study in the areas of our respondents' attitudes toward the linkage between their education and jobs, the kinds of educational experiences they have had, and their experiences in the labour market. Basic distributions of our findings will be presented for all respondents in each of these areas.

The second level of analysis will involve examining these distributions in terms of the variables of sex and year of graduation. The sex control is essential because of the very different educational and occupational experiences of males and females. The use of the variable year of graduation, of course, represents an attempt to determine types and directions of change experienced by university graduates over the past decade with reference to their educational and occupational experiences and how these relate to one another.

Where it proves relevant to do so, further controls will be applied within this analytical framework of sex and year of graduation. In particular, the action of the following variables will be considered at relevant points in the analysis: respondent's socio-economic background in terms of father's education and father's occupation, the university from which the respondent graduated, the major field of study in which the respondent received his or her undergraduate degree, the respondent's self-estimation of the academic average the respondent received during the senior year of undergraduate study, and whether or not the undergraduate degree received was a general or honours degree.

Given the way in which our sample was drawn and the procedures for measuring many of our major variables, the chi square test of statistical significance may be usefully employed in interpreting those of our findings where two or more variables are cross-tabulated. For the purposes of

our report, any value of chi square beyond the .05 level is considered statistically significant (that is, there is a less than one chance in 20 that the association between the variable occurred by chance rather than being a statistically significant relationship). The statistical significance of chi square has been provided on all tables where it was appropriate to use the test. It should also be noted that the total number of cases on which each table is based will vary from table to table. This is a result of the fact that not all respondents answered all questions or, because of differences in experience, not all questions applied to all respondents.

Finally, we briefly comment on our approach to the measurement and classification of data on two aspects of jobs held by our respondents after graduation. The first of these is concerned with a means of classifying the general sector in which the respondent was employed. We were concerned in this research to develop a broad categorization of types of employers in order to make some assessment of how the employment patterns of university undergraduate degree holders have changed over time. Existing Dominion Bureau of Statistics classification systems were investigated including the Standard Industrial Classification Manual and the Occupational Classification Manual: Census of Canada, 1961.¹¹ However, both of these classification systems were found to be too broad and include many industrial and

and occupational sub-classifications which would have little relevance with regard to the employment patterns of university undergraduate degree holders. The classification system we have developed represents an attempt to compromise between a reasonable degree of generality while retaining relevance to the actual likely employment patterns of the population we are investigating. Thus, we have differentiated three modes of government employment. In addition, there are three modes of employment in the educational sector, one being elementary or secondary education, the second being university teaching or research, and the third being employment in any other kind of post-secondary institution such as, for example, a community college. The category "manufacturing industry" relates to employment in any sector where an actual physical, as opposed to service, product is produced. The four other employment sectors identified are transportation and communications, trade, finance, and service.

The second aspect of full-time jobs after graduation that we wished to measure was the occupational prestige of these jobs in order to have some means of assessing the changing labour market value of undergraduate education. The occupational prestige scale we have used is that developed by Professors Pineo and Porter and is based upon Canadian data.¹²

C. Major Questions to Which the Research is Directed

The following is a list of the major questions to which the research is directed:

- (1) Do more recent graduates find their education less relevant to their occupation than their earlier counterparts?
- (2) Are there any trends to be observed in the types of fields studied by undergraduate degree holders?
- (3) What are the major patterns of financial support for university undergraduate degree training now as opposed to ten years ago?
- (4) Are more recent graduates more likely to have been part-time or full-time students than their earlier counterparts?
- (5) Are recent graduates more likely to enter post-graduate training than their earlier counterparts and, if so, how do they finance such training?
- (6) To discover if more recent graduates have more difficulty obtaining jobs after graduation than their earlier counterparts.
- (7) To discover if more recent graduates obtain lower status jobs upon graduation than their earlier counterparts.
- (8) To discover which methods of job seeking were found most effective by university graduates and how these patterns have changed over time.

- (9) To discover if there have been any shifts over time in the type of major employment sectors where university undergraduate degree holders obtain jobs.
- (10) To obtain information on any experiences with unemployment our respondents may have had.

In addition, these questions will be sub-divided in the course of our search for sources of variation in terms of respondent's sex and year of graduation. Further sub-divisions of the research question will obtain at relevant points within that framework with reference to other variables such as respondent's socio-economic and educational background.

Footnotes

- 1 A.G. Atkinson, K.G. Barnes and E. Richardson, Canada's Highly Qualified Manpower Resources (Ottawa, Department of Manpower and Immigration, 1970).
- 2 W.G. Fleming, Background and Personality Factors Associated with Educational and Occupational Plans and Careers of Ontario Grade 13 Students, Report No. 1, Atkinson Study of Utilization of Student Resources (Toronto, Department of Educational Research, Ontario College of Education, 1957).
- 3 Ibid., preface, iii.
- 4 W.A. Cruikshank and T.J. Wigney, A Follow-Up Study of Atkinson Students Who Became Secondary School Teachers, Report No. 12, Atkinson Study of Utilization of Student Resources (Toronto, Department of Educational Research, Ontario College of Education, 1965).
- 5 Carnegie Human Resources Data Bank, "Carnegie Study of Identification and Utilization of Talent in High School and College", Pamphlet No. 1 (Toronto, O.I.S.E., 1964), 1.
- 6 Sewell's research is reported in a number of articles, including: W.H. Sewell and V.P. Shah, "Social Class, Parental Encouragement and Educational Aspirations," American Journal of Sociology, 73 (1968), 559-72; W.H. Sewell, A.O. Haller and A. Portes, "The Educational and Early Occupational Attainment Process," American Sociological Review, 34, No 1 (1969), 82-92; W.H. Sewell and V.P. Shah, "Parents' Education and Children's Educational Aspirations and Achievements," American Sociological Review, 33, April (1968), 191-209; and W.H. Sewell and V.P. Shah, "Socio-Economic Status, Intelligence and the Attainment of Higher Education," Sociology of Education, 40, No. 1 (1967), 1-23.
- 7 L.M. Sharpe, Education and Employment (Baltimore, Md., John Hopkins Press, 1970).
- 8 N. Miller, One Year After Commencement, Report No. 93 (Chicago, National Opinion Research Centre, University of Chicago, 1963).

- 9 J.L. Spaeth, "Occupational Attainment Among Male College Graduates," American Journal of Sociology, 75, No. 4 (1970), 633.
- 10 All universities, with the exception of the University of Waterloo, provided the researcher with complete sample lists. The Alumni Office at Waterloo declined to provide such lists but agreed to carry out the mailing and follow-up procedures themselves. Unfortunately, these procedures were not carried out with the same rigour as for the other three universities where the author of the report was responsible for all such procedures. The result is a lower rate of response for Waterloo than for the other three universities sampled.
- 11 Dominion Bureau of Statistics, Standard Industrial Classification Manual, December, 1960, 1601-502 (Ottawa, Queen's Printer, 1960); see also, Occupational Classification Manual: Census of Canada, 1961, 6061-501 (Ottawa, Queen's Printer, 1961).
- 12 P.C. Pineo and J. Porter, "Occupational Prestige in Canada," Canadian Review of Sociology and Anthropology, 4, No. 1 (1967), 24-40.

Chapter III

Principal Characteristics of the Data Base

Introduction

This chapter falls into two sections. The first is concerned with providing a brief overview of how the 4,000-plus respondents to this survey are distributed in terms of a number of principal dimensions such as age, sex and general social background. In the second section of the chapter, we investigate how certain of these basic characteristics have shown any tendency toward change over the time periods our graduates are selected from, that is, 1960, 1964 and 1968. The major findings of this chapter are summarized below in point form.

- (1) Overall, 56.2 per cent are male and 43.8 per cent are female. This sex ratio in university undergraduate arts and science education has not shown any significant trend of change over the years with which our survey is concerned.
- (2) Overall, 83.8 per cent of our respondents are Canadian-born, 11.3 per cent are naturalized Canadians, and 4.9 per cent fall into the categories of landed immigrant and "other." These ratios have shown little tendency to change over the years.
- (3) With regard to respondent's socio-economic background by father's education, we found that, overall, 22.9 per cent of the respondents had

fathers with 0-8 years of education, 32.9 per cent had fathers with 9-12 years of schooling, 24.1 per cent had fathers with between 13 and 16 years of schooling, and 20.1 per cent had fathers with 16 or more years of schooling.

With regard to trends of change, our data show that more recent graduates are more likely to have fathers falling into the 11 to 15 years of schooling category and fewer with fathers having 16 or more years of schooling.

- (4) Similarly, with regard to respondent's socio-economic background by father's occupation, we find an overall general trend in the direction of a greater proportion of 1968 graduates, as compared with 1960 graduates, having fathers with occupations falling toward the lower end of the socio-economic scale. The proportion of graduates with fathers having occupations falling toward the higher end of the scale has diminished somewhat between 1960 and 1968.
- (5) In terms of the measures referred to under (3) and (4) above, it can be seen that the socio-economic base of recruitment to university undergraduate arts and science education has broadened somewhat. It must be recognized, however, that respondents with fathers having higher

degrees of education or prestigious jobs are still over-represented in the university population.

For example, it may be seen from Table 3:5 in Appendix 4 that 24.0 per cent of our respondents had fathers with occupations in the highest prestige class. This proportion is substantially higher than the proportion found in this occupational class in the normal population. See, for example, W.E. Kalbach and W.W. McVey, The Demographic Bases of Canadian Society (Toronto, McGraw-Hill, 1971) 213-43.

- (6) With regard to the variable size of respondent's home town, we find that less than 8.8 per cent of our sample came from communities of 1,000 to 10,000, 15.6 per cent from communities of 10,000 to 50,000, 14.3 per cent from communities of 50,000 to 250,000, and 47.9 per cent from communities of greater than 250,000.
- (7) With regard to the variable size of present home town, we find that 2.6 per cent of our sample came from communities of less than 1,000, 5.8 per cent from communities of 1,000 to 10,000, 10.9 per cent from communities of 10,000 to 50,000, 22.6 per cent from communities of 50,000 to 250,000, and 58.0 per cent from communities of greater than 250,000.

A. Basic Distributions

Tables 3:1 to 3:13 provide the most basic information about our respondents in terms of such variables as sex and socio-economic background. The tables are in Appendix 4. A brief description of the tables follows.

From Table 3:1, it can be seen that the age distribution of our respondents is weighted toward the younger end of the scale. This simply reflects the fact that more students were enrolled in university in 1968 than in 1960 and, consequently, such younger graduates constitute a larger proportion of the sample. It should also be noted that the age breaks used are rather refined and that, for all practical purposes, we are dealing with an essentially homogeneous sample with respect to age.

Table 3:2 shows that approximately 56 per cent of our sample were males while 44 per cent were females. The substantial number of females in the sample reflects the degree to which females enrol in programs of university general undergraduate education. Sex, of course, will be used as a control variable in subsequent analysis. From Table 3:3, it can be seen that the great majority of respondents in the sample are either Canadian-born or naturalized Canadians. Less than five per cent of the sample falls into the landed immigrant or "other" categories.

Turning next to Table 3:4, we see the breakdown for

the first of a number of measures of socio-economic background that were gathered in the questionnaire. In this case, it is respondent's socio-economic background by father's education. As may be seen from the table, 22.9 per cent of our respondents had fathers with 0-8 years of schooling, 32.9 per cent had fathers with 9-12 years of schooling, 24.1 per cent had fathers with 13-16 years of schooling, and 20.1 per cent had fathers with 16 or more years of schooling. The fact that there are a substantial number of cases within each category suggests that this particular measure of socio-economic background will be particularly useful as a control variable. It is also evident from the table, however, that university graduates are much more likely to have highly educated fathers than would be the case in the population at large.

Table 3:5 again provides data on a measure of socio-economic background although in this case the variable is father's occupation. This variable has been measured in terms of the Porter-Pineo scale of occupational prestige, a scale based on Canadian data: in this case, how a representative sample of the Canadian public rated the prestige of 204 occupational titles.¹ The scale ranges from a low of 7.3 for the occupational title "someone who lives on relief" to a high of 89.9 for "provincial premier." We have grouped the occupational prestige scores into eight categories ranging from high to low. As may be seen from

Table 3:5, the largest number of respondents have fathers with occupations falling either in the lower or the higher ranges of the scale.

Table 3:6 provides information on respondent's socio-economic background by mother's education. Comparing this table with Table 3:4, it may be seen that slightly fewer of the mothers fall into the 0-8 years of schooling category than the fathers. At the high end of the scale, only 6.6 per cent mothers have 16 or more years of schooling as compared with 20.1 per cent in the case of fathers.

The final measure of respondent's socio-economic background is found in Table 3:7. This table represents the response to the following question: "On a scale from 1 to 7, where 1 represents not well off at all and 7 represents very well off, how would you describe your family's economic situation while you were growing up?" The data reported in the tables show that people have a strong tendency, when asked to self-assess their socio-economic position, to place themselves in a middle-class situation. Where the measurement of socio-economic background is self-assessed, there is a tendency for those from lower socio-economic backgrounds to upgrade their positions, while those from higher socio-economic backgrounds tend to downgrade their position somewhat. For this reason, in subsequent analysis, we will make use of the more objective measures of socio-economic background, such as father's education and occupation.

Tables 3:8 through 3:10 present data pertaining to aspects of the respondent's family of procreation, that is, the family he or she has established through marriage. As may be seen from Table 3:8, 67.2% of our respondents are married. Of all the respondents, 59.7 per cent have no children, 30.5 per cent have one or two children, while just over nine per cent have three or more children. As may be seen from Table 3:10, university graduates tend to have spouses with occupations falling into the relatively higher end of the occupational prestige scale.

Tables 3:11 and 3:12 provide data on the size of the respondent's home town and the size of the community in which he presently lives. As may be seen from both tables, there is a tendency for the graduates in our sample to both come from and live in larger communities. A comparison of the two tables suggests that those respondents coming from smaller communities are not likely to return to them after completing their education.

Finally, Table 3:13 provides information upon the religious affiliation of respondents in the sample. As may be seen from that table, 56.9 per cent are Protestants, 16.0 per cent are Roman Catholics, 7.4 per cent are Jewish, while 19.7 per cent classified themselves as "other" or "none".

We now proceed to a more detailed analysis of what trends may be observed in the distribution of these characteristics between 1960, 1964 and 1968 graduates.

B. Trend Analysis

Our next concern is to discover if any of the basic characteristics we have examined have shown patterns of change over time. This analysis is conducted by means of cross-tabulating respondent's year of graduation against various characteristics. Table 3:14 through 3:20 summarize our principal findings in this regard.

Turning first to Table 3:14, the results involving year of graduation and sex are rather inconclusive. In 1960, 56.7 per cent of respondents were male while 43.3 per cent were female. In 1964, the proportion of males to females had increased very slightly. In 1968, females had once again shown an increase and the percentage of males had decreased. These findings, then, do not suggest any clear trend with regard to the sex ratio in university general arts and science education. However, in terms of the number of females in all programs at the university, the table does suggest that females are disproportionately represented in arts and science programs.

Table 3:15 reports the findings with regard to year of graduation and citizenship. This table gives evidence only of a very weak trend in the direction of a greater number of naturalized Canadians. Changes in other directions are even less significant.

It may be seen from Table 3:16 that the most notable trend

in the relationship between year of graduation and father's education is that the number of graduates having fathers with 16 or more years of schooling has decreased systematically over the years, being 31.6 per cent in 1960 as compared with 23.2 per cent in 1968. The next highest category of father's education, 13 to 15 years, increased from 13.4 per cent in 1960 to 17.6 per cent in 1964 and then slipped slightly to 16.9 per cent in 1968. The trend has been clearer in the case of the 11 to 12 years of schooling category. Here the increase has been from 13.1 per cent of respondents' fathers falling in this category in 1960 to 20.6 per cent in 1968. As for the eight to 10 years category, this has dropped slightly from 29.3 per cent in 1960 to 26.5 per cent in 1968. About 12 per cent of respondents' fathers fall in the lowest category, 0-7 years, for all three time periods. Table 3:16 should be viewed in connection with Table 3:17 which provides our other major measure of respondents' socio-economic background, father's occupation. It may be seen from the latter table that the trend over the years is for a greater number of university graduates to have fathers with occupations at the lower socio-economic end of the scale and, by implication, fewer respondents were found with fathers having occupations at the higher end of the socio-economic scale. In general, both these tables are supportive of the contention that the socio-economic base of recruitment to university post-secondary

education is broadening somewhat. It is also clear from the tables, however, that respondents whose fathers had higher degrees of education or prestigious occupations are still over-represented in the university population.²

Tables 3:18 and 3:19, which deal with year of graduation and size of home town and year of graduation and size of present home town respectively, show no notable trends except a very slight trend in the direction of more recent graduates coming from larger centres and also for more recent graduates to show a slightly greater tendency to locate in larger centres.

Finally, Table 3:20 provides findings with regard to year of graduation and religion. As we may see from this table, the proportion of Protestants has declined over the years and the number of Catholics and Jews has increased. Also showing an increase is that category where individuals classify themselves as having "other" or "none" with regard to religion.

Table 3:14

Year of Graduation and Sex
(%)

	1960	1964	1968
Male	56.7	57.2	54.5
Female	43.3	42.8	45.5
Total N	749	1224	1856

Table 3:15

Year of Graduation and Citizenship

(%)

	1960	1964	1968
Canadian-born	85.6	85.5	82.0
Naturalized	8.6	10.1	13.1
Landed Immigrant	2.1	2.4	2.9
Other	3.6	2.0	2.1
Total N	745	1222	1851

Table 3:16

Year of Graduation and Father's Education

(%)

Years of Schooling	1960	1964	1968
0-7	12.5	11.6	12.8
8-10	29.3	27.0	26.5
11-12	13.1	16.2	20.6
13-15	13.4	17.6	16.9
16 or More	31.6	27.6	23.2
Total N	753	1230	1867

Table 3:17

Year of Graduation and Respondent's Socio-Economic
Background by Father's Occupation (%)

As Rated From Low to High on Porter- Pineo Occupational Prestige Scale	1960	1964	1968
NA/DK	3.6	2.7	1.9
1-19	1.1	0.9	0.9
20-29	4.5	4.8	6.6
30-39	9.3	9.1	13.4
40-49	23.5	26.5	28.2
50-59	16.5	18.3	17.4
60-69	23.9	22.7	18.7
70-79	8.9	8.0	7.2
80-99	8.8	7.0	5.7
Total N	753	1230	1867

Table 3:18

Year of Graduation and Size of Home Town

(%)

	1960	1964	1968
Less than 1,000	10.5	9.9	7.2
1,000-10,000	13.1	13.6	12.9
10,000-50,000	16.1	15.9	15.5
50-250,000	13.9	13.3	14.9
Greater than 250,000	46.4	47.3	49.4
Total N	746	1221	1853

Table 3:19

Year of Graduation and Size of Present Town

(%)

	1960	1964	1968
Less than 1,000	2.2	3.7	2.6
1,000-10,000	9.0	8.4	5.8
10,000-50,000	11.3	12.3	10.9
50,000-250,000	23.5	23.5	22.6
Greater than 250,000	54.0	52.2	58.0
Total N	744	1219	1847

Table 3:20

Year of Graduation and Religion
(%)

	1960	1964	1968
Protestant	61.2	59.0	53.2
Catholic	15.9	15.5	16.9
Jewish	5.5	7.4	8.2
Other	17.4	18.0	21.7
Total N	743	1210	397

Footnotes

- ¹ P. Pineo and J. Porter, "Occupational Prestige in Canada," Canadian Review of Sociology and Anthropology, 4, No. 1 (1967), 24-40. Porter and Pineo show us how a representative sample of Canadians evaluate, in prestige terms, some 204 jobs. The scale is constructed in such a way that each job has its own numerical rating which is equivalent to its prestige rank. Thus, for example, the scale contains a number of highly ranked jobs such as physician (87.2), university professor (84.6), and architect (78.1). One can travel all the way down the scale from these highly ranked jobs to the bottom of the scale where there are jobs that rank low in prestige terms such as janitor (17.3), garbage collector (14.8), and laundress (19.3). In our table, we simply present occupational prestige scores in terms of eight convenient groups.
- ² See, for example, W.E. Kalbach and W.W. McVey, The Demographic Bases of Canadian Society (Toronto, McGraw-Hill, 1971), 213-43.

Chapter IV

Education and Occupational Attitudes

Introduction

Chapter IV is concerned with reporting the attitudes of our respondents with regard to their perceptions of the fit between their educational and occupational experiences. The chapter is divided into five sections. The first section is concerned with respondents' perceptions of the overall relevance of their education for their subsequent labour market experiences. The second section is concerned with the extent to which respondents were influenced by the kind of work they wanted to do after graduation in planning their undergraduate fields of study. The third section is concerned with respondents' attitudes with regard to the importance they place on work in relationship to their overall life happiness. The fourth section is concerned with the kinds of values respondents are seeking to realize in their occupations. The fifth and final section is concerned with reporting the respondents' perceptions of the degree of responsibility they had in their first job after receiving their undergraduate degree. The principal findings of this chapter are now summarized in point form.

- (1) Graduates of Toronto and Queen's were generally less likely to view their undergraduate education in terms of subsequent employment than graduates of McMaster and Waterloo. B.Sc. graduates, as compared with B.A. graduates, tended to place

more importance on work considerations in planning their undergraduate educational career and generally placed more importance on work satisfaction in relationship to overall life happiness. B.Sc. graduates perceived themselves as having slightly less responsible jobs after graduation than B.A. graduates.

- (2) Honours degree graduates, when compared with general degree graduates, tended to place more emphasis on intrinsic values as far as their subsequent occupations were concerned, that is, they were more likely to value their occupation for the interest it provided in and of itself rather than for the kinds of financial or prestige rewards it afforded.
- (3) Natural science graduates were least oriented toward people or humanitarian considerations in terms of their subsequent occupational choices and most interested in their jobs from an intrinsic point of view, that is, an interest in the job for the sake of the job itself. Natural science graduates were also most influenced by work considerations in planning their undergraduate educational career and were followed in this respect by social science graduates. Natural science graduates perceived themselves as receiving less

responsible jobs after graduation than their counterparts graduating in humanities or social science. It should also be noted, however, that natural science graduates perceived a greater relationship between their undergraduate education and work than either humanities or social science graduates.

- (4) With regard to year of graduation, 1968 graduates saw less relationship between their undergraduate education and subsequent jobs than their 1960 or 1964 counterparts. In addition, 1968 graduates were less concerned than their earlier graduating counterparts with work considerations or work satisfaction.
- (5) Respondent's sex emerged as one of the more significant discriminating variables. Females proved to place greater value upon humanitarian or people-oriented considerations in their choice of occupations and were less concerned with the extrinsic or intrinsic properties of jobs after graduation. That is to say, they were less concerned about either the rewards to be obtained through work or the intrinsic interest of the work in and of itself. Females also emerged as being less concerned with work considerations when planning their undergraduate education and were less concerned

with work in relationship to overall life happiness.

- (6) When sex and year of graduation are used with one another in the analysis, we discover that as far as the importance of work considerations is concerned, it is our male respondents who tend to be devaluing job factors over the years. Females are essentially stable in this respect.
- (7) With regard to our respondents' perceptions of the relationship between education and jobs, that is, the relevance of undergraduate education to subsequent job experiences, we find that male graduates view the relationship as weakening while females exhibit no significant change.
- (8) With regard to the importance of work satisfaction and overall life happiness, we find that over time males are attaching increasingly less value while females are remaining essentially stable on this dimension.
- (9) With regard to the kinds of values respondents seek to realize in their occupational lives, we find that males are becoming less concerned with extrinsic factors and more oriented toward people or humanitarian characteristics. On the other hand, females are becoming somewhat less people or humanitarian oriented over time and more concerned with the intrinsic properties of their work.

- (10) With regard to respondents' perceptions of the amount of responsibility they enjoyed on their first job after graduation, females over time are increasingly likely to perceive themselves as having more responsibility. The pattern for males in this respect has been much more stable over time.

A. Perceived Relevance of Education to Jobs

Among the questions asked of each respondent, three related to the influence of his or her education upon the attainment and the performance of his or her present job (see Appendix 1, question 2, 3 and 4). Since response to these questions was highly correlated,¹ the three were combined to form an index² describing the overall perceived relevance of an undergraduate degree to the demands of the labour market.

As illustrated in Table 4:1, only 8.8 per cent of respondents view their undergraduate education as being of little relevance to their present jobs. Of the remainder, 62.0 per cent consider their education to be somewhat relevant to their employment, and 29.3 per cent consider it highly relevant. With the effects of university program and of university attended assessed (see Tables 4:2, 4:3 and 4:4), we find that graduates of McMaster and Waterloo attach higher employment value to their undergraduate education than graduates of Toronto and Queen's and that an honours course, especially in science, is thought to be better job training than a general course in science or in arts. The tables referred to in this connection are statistically significant.

Tables 4:5 and 5:6 show the degree to which perception of relevance varies with year of graduation and sex. As may be seen in Table 4:5, 1968 graduates are considerably less convinced of the occupational usefulness of their

training than are graduates of previous years. Table 4:5 is statistically significant. Although Table 4:6 reveals no significant differences in the attitudes of males and females, Table 4:7 suggests that, with year of graduation controlled for, some significant trends do exist for males and much less so for females. By 1968, males have become notably more disposed to view their education as less relevant while the attitude of females has remained almost uniform. In sum, then, males graduating in arts and science in 1968 generally attribute significantly less relevance to their undergraduate education than graduates of 1960 and 1964. By contrast, female graduates exhibit a remarkably stable outlook on this question and, by 1968, actually assign slight more job importance to an undergraduate education than do males.

Within the sex and year of graduation framework of analysis, further controls were made for respondent's socioeconomic background in terms of father's occupation and education, respondent's degree program, and respondent's field of study, that is, humanities, social science or natural science. These controls produced no significant variations in the predominant pattern discussed above.

Table 4:1

Basic Distribution of Responses: Relevance of
an Undergraduate Education to the Labour Market

	Percentage
Not Relevant	8.8
Somewhat Relevant	62.0
Relevant	29.2
Total N	3815

Table 4:2

Relevance by University Attended
(%)

	University			
	Toronto	Queen's	McMaster	Waterloo
Not Relevant	9.5	9.2	6.6	5.7
Somewhat Relevant	62.4	61.9	60.1	64.4
Relevant	28.1	28.9	33.3	29.9
Total N	2098	738	832	174

Chi Square = 14.15265 with 6 Degrees of Freedom.
Significance = 0.0280

Table 4:3

Relevance by Field of Study
(%)

	Humanities	Social Sciences	Natural Sciences
Not Relevant	8.1	11.0	8.0
Somewhat Relevant	62.4	64.0	58.6
Relevant	29.5	25.0	33.4
Total N	1650	1164	877

Chi Square = 22.69231 with 4 Degrees of Freedom.
Significance = 0.0001

Table 4:4

Relevance by Undergraduate Degree

(%)

	General B.A.	Honours B.A.	General B.Sc.	Honours B.Sc.
Not Relevant	10.2	4.5	12.3	3.0
Somewhat Relevant	61.6	65.3	61.9	58.1
Relevant	28.2	30.2	25.8	38.9
Total N	2364	770	391	270

Table 4:5

Relevance by Year of Graduation (A)

(%)

	1960	1964	1968
Not Relevant	9.1	6.2	10.4
Somewhat Relevant	59.4	61.3	63.1
Relevant	31.5	32.5	26.5
Total N	739	1201	1790

Chi Square = 26.09428 with 4 Degrees of Freedom.
 Significance = 0.0000

Table 4:6

Relevance by Sex

(%)

	Male	Female
Not Relevant	8.5	9.0
Somewhat Relevant	61.7	62.2
Relevant	29.8	28.8
Total N	2204	1692

Chi Square = 0.62018 with 2 Degrees of Freedom.
Significance = 0.7334

Table 4:7

Relevance by Year of Graduation (B)

(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Not Relevant	6.6	5.3	11.9	12.3	7.6	8.8
Somewhat Relevant	59.3	60.3	63.5	59.7	62.8	62.7
Relevant	34.1	34.4	24.6	28.0	29.6	28.5
Total N	425	697	961	310	500	820

Chi Square for Males = 39.97047 with 4 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 5.30086 with 4 Degrees of Freedom.
Significance = 0.2578

B. Influence of Employment Considerations in Choosing Field of Study

Since a respondent's interpretation of the employment value of his undergraduate education could be a function of the attention he paid to job considerations in originally selecting his undergraduate field, it is appropriate to consider responses to this question (see Appendix 1, question 1) in view of the attitudes just described toward relevance.

As is indicated in Table 4:8, 51.4 per cent of respondents admit to having been influenced by job considerations in selecting their field while 39.4 per cent describe themselves as relatively immune to perceived requirements of the job market. Tables 4:9, 4:10 and 4:11 suggest that Toronto and Queen's graduates were somewhat less influenced by employment factors than those of McMaster and Waterloo, that natural science students were considerably more influenced than students of social science and the humanities, and that students in a science program, especially an honours course, were more concerned with the job potential of their studies than were general B.A. or, in particular, honours B.A. students. Table 4:9 is not statistically significant although Tables 4:10 and 4:11 are.

As for year of graduation, we see from Table 4:12 that attention to the demands of the labour market remained fairly constant until 1964, then declined quite clearly in 1968.

This table is statistically significant. According to Table 4:13, females have been far less disposed than males to regulate their education according to job chances and, as illustrated in Table 4:14, have maintained this distinction in every graduating year. Unlike males, who evidence an obvious shift toward indifference in 1964, females have been constant in their relative inattention to employment factors. Table 4:13 is statistically significant. Table 4:14 is statistically significant for males but not for females.

Within the sex and year of graduation framework of analysis, further controls were made for degree program, field of study, and respondent's socio-economic background in terms of father's education and occupation. The only variation of any note running counter to the general trend was that, among female graduates, natural science graduates are becoming more influenced by work considerations.

Table 4:8

Basic Distribution of Responses: Influence of Employment
Considerations Upon the Choice of a Field of Study

	Percentage
Not Influenced	39.4
Mid-Point	9.2
Influenced	51.4
Total N	3984

Table 4:9

Influence of Work Considerations by University Attended
(%)

	University			
	Toronto	Queen's	McMaster	Waterloo
Not Influenced	41.3	39.8	36.0	33.0
Mid-Point	8.8	9.5	10.1	9.7
Influenced	49.9	50.7	53.9	57.3
Total N	2158	757	842	176

Chi Square = 10.62576 with 6 Degrees of Freedom.
Significance = 0.1007

Table 4:10

Influence of Work Considerations by Field of Study
(%)

	Humanities	Social Sciences	Natural Sciences
Not Influenced	44.8	39.3	31.3
Mid-Point	8.2	10.4	9.9
Influenced	47.0	50.3	58.8
Total N	1687	1198	896

Chi Square = 47.28772 with 4 Degrees of Freedom.
Significance = 0.0000

Table 4:11

Influence of Work Considerations by Undergraduate Degree
(%)

	General B.A.	Honours B.A.	General B.Sc.	Honours B.Sc.
Not Influenced	39.5	47.1	32.2	32.2
Mid-Point	9.8	7.4	11.6	7.4
Influenced	50.7	45.5	56.2	60.4
Total N	2406	798	397	283

Chi Square = 39.55894 with 6 Degrees of Freedom.
Significance = 0.0000

Table 4:12

Influence of Work Considerations by Year of Graduation (A)
(%)

	1960	1964	1968
Not Influenced	37.3	37.4	42.3
Mid-Point	7.5	9.1	10.1
Influenced	55.2	53.5	47.6
Total N	746	1220	1853

Chi Square = 18.22289 with 4 Degrees of Freedom.
Significance = 0.0011

Table 4:13

Influence of Work Considerations by Sex

(%)

	Male	Female
Not Influenced	33.3	46.9
Mid-Point	9.4	9.0
Influenced	57.3	44.1
Total N	2243	1741

Chi Square = 78.62909 with 2 Degrees of Freedom.
 Significance = 0.0000

Table 4:14

Influence of Work Considerations by Year of Graduation (B)
(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Not Influenced	29.8	29.7	37.8	46.7	47.9	47.3
Mid-Point	7.6	8.5	10.9	7.5	9.8	9.3
Influenced	62.6	61.8	51.3	45.8	42.3	43.4
Total N	423	694	1004	319	520	838

Chi Square for Males = 25.68709 with 4 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 1.80102 with 4 Degrees of Freedom.
Significance = 0.7723

C. Importance of Work Satisfaction to Life Happiness

Another measure of attitudes toward education and employment is our question assessing the importance of satisfaction derived from work to the respondent's overall happiness (see Appendix 1, question 6). As may be seen from Table 4:15, work satisfaction is considered important by 77.7 per cent of all respondents in the sample and unimportant by only 8.7 per cent.

Tables 4:16, 4:17 and 4:18 indicate, respectively, that work satisfaction is of greater importance to graduates of McMaster and Waterloo than to graduates of Toronto or Queen's, that students of humanities and natural sciences are more concerned with job satisfaction than social science graduates, and that of the four degree groups considered, work satisfaction is of most importance to honours B.Sc. graduates and of least importance to general B.Sc.'s. All three tables are statistically significant.

As in the case of other attitudinal variables in the survey, sex and the year of graduation of the respondent exercised a very obvious influence on the nature of response. Table 4:19 illustrates that the importance of work satisfaction has been steadily declining since 1960 while Table 4:20 reveals a much higher propensity among males than females to value work highly in terms of overall life happiness. This latter finding, however, seems a temporary

phenomenon. As indicated in Table 4:21, males are demonstrating a declining investment in their work to the point where, in 1968, they approximate the female point of view (which has remained remarkably stable).

Within the sex and year of graduation framework of analysis, further controls were introduced for degree program, field of study, and respondent's socio-economic background in terms of father's occupation and education. The exceptions of note to the general trend discussed are male honours B.Sc. graduates and females enrolled in natural science, both of whom continue to assign a high and increasing importance to work satisfaction.

Table 4:15

Basic Distribution of Responses:
The Importance of Work Satisfaction

	Percentage
Not Important	8.7
Mid-Point	13.6
Important	77.7
Total N	3894

Table 4:16

Importance of Work Satisfaction by University Attended
(%)

	University			
	Toronto	Queen's	McMaster	Waterloo
Not Important	9.6	8.6	7.0	4.0
Mid-Point	14.0	14.2	12.6	9.8
Important	76.4	77.2	80.4	86.2
Total N	2094	740	834	174

Chi Square = 15.47855 with 6 Degrees of Freedom.
Significance = 0.0168

Table 4:17

Importance of Work Satisfaction by Field of Study

(%)

	Humanities	Social Sciences	Natural Sciences
Not Important	6.7	11.1	9.3
Mid-Point	14.8	14.3	11.1
Important	78.5	74.6	79.6
Total N	1646	1164	881

Chi Square = 23.06522 with 4 Degrees of Freedom.
Significance = 0.0001

Table 4:18

Importance of Work Satisfaction by Undergraduate Degree

(%)

	General B.A.	Honours B.A.	General B.Sc.	Honours B.Sc.
Not Important	8.4	7.9	14.7	4.7
Mid-Point	14.1	14.5	10.3	10.4
Important	77.5	77.6	75.0	84.9
Total N	2356	773	387	278

Chi Square = 30.31357 with 6 Degrees of Freedom.
Significance = 0.0000

Table 4:19

Importance of Work Satisfaction by Year of Graduation (A)
(%)

	1960	1964	1968
Not Important	5.2	6.0	12.2
Mid-Point	14.1	14.0	13.5
Important	80.7	80.0	74.3
Total N	736	1210	1784

Chi Square = 49.02164 with 4 Degrees of Freedom.
Significance = 0.0000

Table 4:20

Importance of Work Satisfaction by Sex
(%)

	Male	Female
Not Important	7.6	9.9
Mid-Point	11.0	16.7
Important	81.4	73.4
Total N	2193	1701

Chi Square = 36.88304 with 2 Degrees of Freedom.
Significance = 0.0000

Table 4:21

Importance of Work Satisfaction by Year of Graduation (B)
(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Not Important	3.5	4.0	12.5	7.4	8.8	11.4
Mid-Point	9.9	10.6	12.0	19.4	18.4	15.2
Important	86.6	85.4	75.5	73.2	72.8	73.4
Total N	423	696	953	309	510	821

Chi Square for Males = 57.26302 with 4 Degrees of Freedom. Significance = 0.0000

Chi Square for Females = 7.69072 with 4 Degrees of Freedom. Significance = 0.1036

D. Employment Values

In addition to the respondents' opinions of the relationship between education and work and of the importance of work to everyday life, an effort was made to assess respondents' orientations to the whole idea of employment or, in other words, to discover the types of work respondents consider to be of personal or social value. To do this, the respondents were asked to choose as follows:

Here is a list of occupational characteristics. Please select, in order of importance, three which would be most important to you for your ideal career. (Please enter the appropriate numbers below.)

- (1) A job that provides a very good salary and one in which you work regular hours and have regular holidays
- (2) A career that is considered a worthy one and which has high prestige and standing in the community
- (3) A career that provides security of employment in that work is always available
- (4) A career that is very useful and important to society in general and in which you directly benefit your fellow man
- (5) A job in which you can meet the public and deal directly with people
- (6) A career where you will have associates or colleagues who have the same general interests and whose company you find extremely stimulating
- (7) An occupation in which you can use all your knowledge, training aptitudes and skills and one which allows you to develop and excel in these areas
- (8) A career that requires a good knowledge of a specialized body of knowledge

- (9) A job where you are pretty well "your own boss" in that you are not always under guidance and supervision of someone else

_____ Most Important
 _____ Second Most Important
 _____ Third Most Important

The first three of these characteristics represent the "extrinsic value complex, that is, an emphasis on money, prestige and security. The next three reflect the "people" or humanitarian orientation, while the last three represent the "intrinsic" orientation, that is, an interest in a line of work for the sake of the work itself. These items have been validated in numerous earlier studies and are regarded as highly reliable measures.³ A weighting system was employed to classify respondents as either extrinsic, people or intrinsic in orientation. Respondents failing to show a clear tendency toward one of these three were placed in a fourth category, "mixed" orientation.

Table 4:22 describes the basic distribution of responses as 7.4 per cent extrinsically oriented, 25.3 per cent people oriented, 24.3 per cent intrinsically oriented, and 43.0 per cent of mixed orientation. Variations which occur according to university attended, field of study, or degree program appear in Tables 4:23, 4:24 and 4:25 and include: a tendency among graduates of Toronto and Queen's to be more highly people oriented, with a leaning towards intrinsic orientation among graduates of Waterloo; a higher degree of people

orientation among humanities and social science graduates with higher intrinsic orientation among science graduates; and, similarly, high people orientation and intrinsic orientation among arts and science students respectively, with students in honours programs displaying more intrinsic motivation than those in general courses. The tables in question are statistically significant.

Table 4:26 indicates that extrinsic and intrinsic orientation are high among males while females display the traditional tendency towards people orientation. This table is statistically significant. Although Table 4:27 suggests no significant differences according to the year of graduation, it may be seen in Table 4:28 that the effects of both year of graduation and of sex are clarified when these variables are combined. It may be seen from this table that males and females are moving from distinctly different orientations in 1960 towards a similar set of values in 1968. Extrinsic orientation, for example, is decreasing among males and increasing among females to the point where the difference is insignificant by 1968. Similarly, people orientation is increasing among males and decreasing among females although in 1968 some distance still remains between the two. Intrinsic orientation, while increasing among females, shows no corresponding decrease among males.

When degree program, field of study and father's occupation and education are added as controls within the sex and

year of graduation framework, the general trend described above persists with a few variations. Within fathers' occupational groups, for example, the decrease in extrinsic motivation among males is accounted for entirely by those from a higher socio-economic background. Among lower status graduates, a slight increase in extrinsic orientation occurs. Similarly, the increase in extrinsic orientation among females is due to those respondents from a lower socio-economic background. Higher status females display a decreasing extrinsic factor (see Table 4:29).

We suggest that the broadening of the socio-economic base of recruitment to university has increased the representation of individuals pursuing post-secondary education as a route to upward social mobility in terms of occupations characterized by prestige and financial reward. It is, of course, clear that contemporaneous with this broadening of the base of recruitment to the university has been a corresponding closing off of opportunities in the higher prestige ranges of the occupational structure for holders of university undergraduate degrees.

Table 4:22

Basic Distribution of Responses: Employment Values
(%)

	Percentage
Extrinsic Oriented	7.4
People Oriented	25.3
Intrinsic Oriented	24.3
Mixed	43.0
Total N	3910

Table 4:23

Employment Values by University Attended
(%)

	University			
	Toronto	Queen's	McMaster	Waterloo
Extrinsic	7.8	6.1	8.5	4.1
People	26.7	27.8	20.9	21.3
Intrinsic	24.1	23.5	23.7	29.0
Mixed	41.4	42.7	46.9	45.6
Total N	2116	742	836	169

Chi Square = 23.24307 with 9 Degrees of Freedom.
Significance = 0.0057

Table 4:24

Employment Values by Field of Study
(%)

	Humanities	Social Sciences	Natural Sciences
Extrinsic Oriented	7.2	7.6	7.4
People Oriented	28.3	25.9	20.5
Intrinsic Oriented	22.6	22.5	28.4
Mixed	41.9	44.0	43.7
Total N	1657	1177	877

Chi Square = 23.96085 with 6 Degrees of Freedom.
Significance = 0.0005

Table 4:25

Employment Values by Undergraduate Degree
(%)

	General B.A.	Honours B.A.	General B.Sc.	Honours B.Sc.
Extrinsic Oriented	7.9	5.9	8.1	7.5
People Oriented	25.5	29.4	21.8	17.9
Intrinsic Oriented	21.4	27.1	26.8	33.0
Mixed	45.2	37.6	43.3	41.6
Total N	2365	785	385	279

Chi Square = 44.89662 with 9 Degrees of Freedom.
Significance = 0.0000

Table 4:26

Employment Values by Sex

(%)

	Male	Female
Extrinsic Oriented	9.2	5.1
People	19.9	32.3
Intrinsic Oriented	27.5	20.1
Mixed	43.4	42.5
Total N	2201	1709

Chi Square = 100.65331 with 3 Degrees of Freedom.
Significance = 0.0

Table 4:27

Employment Values by Year of Graduation (A)
(%)

	1960	1964	1968
Extrinsic Oriented	8.7	8.7	6.0
People Oriented	26.1	25.2	25.4
Intrinsic Oriented	24.2	23.5	25.0
Mixed	41.0	42.6	43.6
Total N	737	1196	1817

Chi Square = 10.80841 with 6 Degrees of Freedom.
Significance = 0.0945

Table 4:28

Employment Values by Year of Graduation (B)

(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Extrinsic	11.9	11.4	6.7	4.5	5.3	5.2
People	18.5	18.8	21.3	36.1	33.7	30.1
Intrinsic	29.5	24.4	29.2	16.9	22.6	20.0
Mixed	40.1	45.4	42.8	42.5	38.4	44.7
Total N	421	677	983	313	513	823

Chi Square for Males = 20.73546 with 6 Degrees of Freedom. Significance = 0.0020

Chi Square for Females = 9.20140 with 6 Degrees of Freedom. Significance = 0.1626

Table 4:29

Socio-Economic Class by Father's Education (%)

Values	Low						High					
	Male			Female			Male			Female		
	1960	1964	1968	1960	1964	1968	1960	1964	1968	1960	1964	1968
Extrinsic	4.6	7.5	7.5	3.6	6.3	6.7	20.0	17.3	5.6	4.8	3.6	3.6
People	14.3	19.0	21.0	37.7	31.2	30.9	24.2	18.0	22.3	35.5	35.7	28.9
Intrinsic	35.0	24.7	29.2	15.9	21.3	17.2	22.1	23.9	29.7	18.1	24.5	23.9
Mixed	46.1	48.8	42.3	42.8	41.1	45.2	33.7	40.8	42.4	41.6	36.1	43.6
Total N	217	385	643	138	253	447	190	272	323	166	249	360

E. Job Responsibility

The final variable to be considered in this chapter relates to the amount of responsibility assumed by the respondent in the first job obtained after receiving an undergraduate degree. Since it is the respondent's subjective impression which is here being assessed, responses to this question are appropriately included among other measures of attitudes.

As Table 4:30 illustrates, 25.5 per cent of respondents attach little responsibility to their first job obtained, while 58.3 per cent consider their job to have definitely been responsible. Although university attended is not significantly associated with perceptions of responsibility, as is clear from Table 4:31, graduates in humanities consider their first jobs more responsible than do graduates of social sciences or natural sciences. In addition, Table 4:32 indicates that B.A. students are generally more disposed than B.Sc. students to perceive first jobs as responsible and that, according to their own judgement, graduates of a general science program are considerably more likely to begin in low responsibility positions. Both Tables 4:31 and 4:32 are statistically significant.

Tables 4:33 and 4:34 indicate, respectively, that graduates of 1968 believe their first jobs to be somewhat more responsible than do graduates of 1960 or 1964 and that females are more likely to perceive their first jobs as

responsible than males. It is likely that part of the variation shown in Table 4:33 results from respondents comparing their first jobs with their present jobs, many earlier graduates obviously having developed a more experienced notion of what constitutes responsibility. Nevertheless, it is clear from Table 4:35 that much of the difference is also attributable to sex. While males have changed little in their perceptions of first jobs, females display a marked and statistically significant tendency to attach an increasing responsibility to their original positions to the point where, by 1968, their assessments are more in the direction of perceiving considerable responsibility than are the assessments of males. These findings suggest that contiguous with increasing female participation in the labour force is an evident rise in females' opinion of their own importance in the labour market.

Further controls for degree program, field of study, father's occupation and education produced nothing of significance to contradict the general trends discussed above.

Table 4:30

Basic Distribution of Responses:
Perceived Responsibility, First Job

	Percentage
Little Responsibility	25.5
Mid-Point	16.3
Much Responsibility	58.2
Total N	3837

Table 4:31

Perceived Responsibility, First Job by Field of Study
(%)

	Humanities	Social Sciences	Natural Sciences
Little Responsibility	22.7	27.3	27.7
Mid-Point	15.1	16.2	18.3
Much Responsibility	62.2	56.5	54.0
Total N	1619	1122	845

Chi Square = 18.78220 with 4 Degrees of Freedom.
Significance = 0.0009

Table 4:32

Perceived Responsibility, First Job by Undergraduate Degree
(%)

	General B.A.	Honours B.A.	General B.Sc.	Honours B.Sc.
Little Responsibility	25.2	24.3	30.8	25.1
Mid-Point	15.6	15.8	16.3	22.8
Much Responsibility	59.2	59.9	52.9	52.1
Total N	2308	748	367	263

Chi Square = 16.30357 with 6 Degrees of Freedom.
Significance = 0.0122

Table 4:33

Perceived Responsibility, First Job By Year of Graduation (A)
(%)

	1960	1964	1968
Little Responsibility	29.9	24.1	24.5
Mid-Point	16.7	18.6	14.9
Much Responsibility	53.4	57.3	60.6
Total N	736	1191	1699

Chi Square = 17.81667 with 4 Degrees of Freedom.
Significance = 0.0013

Table 4:34

Perceived Responsibility, First Job by Sex
(%)

	Male	Female
Little Responsibility	27.9	22.4
Mid-Point	16.5	16.0
Much Responsibility	55.6	61.6
Total N	2116	1671

Chi Square = 16.80823 with 2 Degrees of Freedom.
Significance = 0.0002

Table 4:35

Perceived Responsibility, First Job by Year of Graduation (B)
(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Little Responsibility	31.6	25.3	28.4	28.0	22.6	20.1
Mid-Point	16.0	19.2	15.7	17.8	17.8	13.8
Much Responsibility	52.4	55.5	55.9	54.2	59.6	66.1
Total N	418	687	893	314	501	797

Chi Square for Males = 7.52784 with 4 Degrees of Freedom. Significance = 0.1105

Chi Square for Females = 16.17763 with 4 Degrees of Freedom. Significance = 0.0028

Footnotes

- ¹ A factor analysis was performed on the attitudinal variables in questions 1 to 6. As is clear from the correlation matrix below, responses to questions dealing with the relevance of an undergraduate education to jobs were closely related (see questions 2, 3 and 4).

	Question 1	Question 2	Question 3
Question 1	1.00000	0.24282	0.24129
Question 2	0.24282	1.00000	0.56535
Question 3	0.24129	0.56535	1.00000
Question 4	-0.07838	-0.33402	-0.38149
Question 5	0.11563	0.21241	0.17269
Question 6	0.18608	0.11923	0.17589

	Question 4	Question 5	Question 6
Question 1	-0.07838	0.11563	0.18608
Question 2	-0.33402	0.21241	0.11923
Question 3	-0.38149	0.17269	0.17589
Question 4	1.00000	-0.05391	-0.01217
Question 5	-0.05391	1.00000	0.20460
Question 6	-0.01217	0.20460	1.00000

- ² A simple additive scale was used to create the index. When added together, responses to those questions ranged from three to 21. They were then recoded as follows: 3 to 8 = not relevant, 9 to 15 = somewhat relevant, and 16 to 21 = relevant.
- ³ See, for example, Morris Rosenberg, Occupations and Values (Glencoe, Ill., The Free Press, 1957) and E.B. Harvey, "Some Implications of Value Differentiation in Pharmacy," Canadian Review of Sociology and Anthropology, February. (1966), 23-7.

Chapter V

Educational Experiences

Introduction

This chapter presents data on the undergraduate educational experiences of our respondents. It is divided into three major sections. The first provides basic distributions for the entire sample in such areas as the proportion of students in our sample from each of the universities selected, types of undergraduate degree obtained, the proportion in our sample from each graduating year selected, any experience with other forms of post-secondary education prior to entering university, major fields of study and subjects pursued by our respondents, respondent's status at university and pattern of residence while attending university, respondent's grade average in final year of program, any changes in university, course, etc. made by respondents during their undergraduate career, and patterns of financial support during undergraduate training. When sufficient variation obtained in these areas, further analysis has been conducted in Section B. with reference to the variables of sex and year of graduation. Finally, in Section C., we consider selected other variables in relation to two aspects of undergraduate educational experience, grade average during final year and major pattern of financial support while an undergraduate.

A point for summary of the major findings of this chapter now follows.

- (1) 54.4 per cent of the sample graduated from the University of Toronto, 21.2 per cent from McMaster University, 19.2 per cent from Queen's University, and 4.4 per cent from Waterloo University.
- (2) 60.7 per cent of respondents held B.A. general degrees, 20.0 per cent held B.A. honours degrees, 10.0 per cent held a B.Sc. general degree, and 7.1 per cent obtained a B.Sc. honours degree.
- (3) 18.9 per cent of respondents were 1960 graduates, 30.8 per cent were 1964 graduates and 46.8 per cent were 1968 graduates.
- (4) Only 10.8 per cent of respondents had some experience with other forms of post-secondary education before attending university.
- (5) 42.8 per cent of respondents cited their major field of study as humanities, social sciences accounted for 30.4 per cent, and natural sciences accounted for 22.7 per cent of respondents.
- (6) 89.4 per cent of respondents reported that they had been full-time undergraduate students. 72.9 per cent reported that they have lived at home for three or four years while attending university.
- (7) 38.0 per cent of respondents reported that part-time and/or summer work was the first most important source of financial support while an undergraduate student. A further 36.6 per cent cited parents or relatives. 6.7 per cent cited loans.

- (8) When sex is controlled, we find that with regard to enrolment patterns in major fields (humanities, social sciences, natural sciences), female patterns have remained essentially stable from 1960 to 1968 but male patterns have changed considerably.
- (9) In 1968, 57.4 per cent of females were found in humanities, 32.0 per cent in social sciences, and 10.7 per cent in natural sciences. This represented virtually no change over 1960.
- (10) Male enrolment in humanities dropped from 42.9 per cent in 1960 to 28.1 per cent in 1968. In social sciences, it rose from 27.5 per cent in 1960 to 37.2 per cent in 1968. The increase in natural sciences was less, rising from 29.5 per cent in 1960 to 34.7 per cent in 1968.
- (11) With regard to degree program (B.A., B.Sc.; honours, general), female enrolment in the B.A. general has been stable (1960, 71.4 per cent; 1968, 71.9 per cent). It has dropped slightly in the B.A. honours from 27.4 per cent in 1960 to 20.5 per cent in 1968. It has risen slightly for both B.Sc. general and B.Sc. honours from 0.6 per cent in 1960 for the degrees to 4.3 per cent and 3.3 per cent respectively in 1968.
- (12) With regard to males and degree program, male enrolment in both B.A. general and B.A. honours has dropped (B.A. general: 1960, 68.5 per cent; 1968, 50.6 per

cent; B.A. honours: 1960, 23.6 per cent; 1968, 17.1 per cent). It has risen strongly for B.Sc. general (1960, 0.7 per cent; 1968, 22.1 per cent) and weakly for B.Sc. honours (1960, 7.2 per cent; 1968, 10.1 per cent).

- (13) With regard to the most important form of financial support while an undergraduate, we found that for males, support of parents or relatives had declined over time, having been 35.0 per cent in 1960, dropping to 21.4 per cent in 1968. Part-time and/or summer work has remained relatively constant for males, being 45.2 per cent in 1960 and 48.4 per cent in 1968. Loans have shown a considerable increase for males from 1.2 per cent in 1960 to 11.7 per cent in 1968.
- (14) Support of parents or relatives is also declining for females, it having been 66.8 per cent in 1960 and dropping to 44.2 per cent in 1968. Part-time and/or summer work is increasing in importance for females, rising from 17.7 per cent in 1960 to 29.5 per cent in 1968. Loans have also increased in importance for females, rising from 0.6 per cent in 1960 to 11.0 per cent in 1968.
- (15) Respondents from lower socio-economic backgrounds were much less likely (25.1 per cent) to have received financial support from parents or relatives than their higher socio-economic background counterparts

(52.8 per cent). Respondents from lower socio-economic backgrounds placed more emphasis on part-time and/or summer work, full-time work and loans.

Respondents from lower socio-economic backgrounds were slightly less likely to obtain A averages in their senior year than their higher socio-economic background counterparts.

A. Educational Experiences: Basic Distributions

A number of aspects of the educational careers of our respondents are now examined in terms of the entire sample.

1. Student Enrolment by University

The percentage distribution of respondents (as shown in Table 5:1) is 54.4 per cent for the University of Toronto, 21.2 per cent for McMaster University, 19.2 per cent for Queen's University, and 4.4 per cent for the University of Waterloo.

2. Type of Undergraduate Degree

With regard to the type of undergraduate degree received, the B.A. general degree accounted for 60.7 per cent of respondents; a further 20.0 per cent of respondents had obtained a B.A. honours degree, 10.0 per cent had obtained a B.Sc. general degree, and 7.1 per cent had obtained a B.Sc. honours degree (see Table 5:2).

3. Student Enrolment by Year

The increasingly high enrolment of universities is reflected in our sample by year of graduation. 1960 graduates accounted for 18.9 per cent of our respondents, 1964

graduates accounted for 30.8 per cent and 1968 graduates constituted 46.8 per cent of the sample (see Table 5:3).

4. Other Post-Secondary Education Prior to University

From our sample, we found that only 10.8 per cent had obtained any other post-secondary education prior to entry to university (see Table 5:4). Of this 10.8 per cent of respondents, by far the largest percentage (61.0 per cent) had attended teachers college (see Table 5:5).

5. Student Enrolment by Field of Study and by Subject

Humanities as a major field of study accounted for 42.8 per cent of respondents while social science claimed 30.4 per cent, with natural sciences as the major field for the smallest percentage of respondents, 22.7 per cent (see Table 5:6).

Subjects, within each major field, showed a great variation in proportion to student enrolment (see Table 5:7). English language and literature claimed the largest student enrolment at 18.3 per cent; psychology was second with 11.4 per cent; and history third with 10.0 per cent.

6. Student Status and Residence Pattern

The vast majority of our respondents (89.4 per cent) reported that they had been full-time students when pursuing

their undergraduate degree (see Table 5:8). Concerning the number of years respondents spent in full-time attendance at university while earning their degree, 82.8 per cent reported that they had attended for either three or four years (see Table 5:9). Again, a high percentage (72.9 per cent) reported that they had resided with their parents for either three or four years while attending university (see Table 5:10).

7. Grade Average in Senior Year

The grade average of the respondents of our sample, as reported by them for their senior year, showed a B grade average for 73.2 per cent of the respondents and an A average for 11.0 per cent. C or D averages were reported by 15.6 per cent of the respondents (see Table 5:11).

8. Changes Made by Respondents During Undergraduate Education

In this regard, we are concerned with three factors: whether or not a respondent changed university, faculty, course or program, or major field of study while an undergraduate; the year in which such a change was made; and the reasons why a respondent made the change. As may be seen from Table 5:12, the greatest proportion of respondents (67.4 per cent) made no changes. The next largest proportion (18.0 per cent) changed course or program. As may be seen

from Table 5:13, the greatest proportion of respondents (61.6 per cent) made the change during their first year of university. 29.9 per cent made such changes during the second year of university. Finally, as may be seen from Table 5:15, the largest proportion of respondents (46.2 per cent) made the change because of dissatisfaction. The next highest proportion (25.7 per cent) made the change because of low grades.

9. Patterns of Financial Support

Table 5:15 presents data on the three most important sources of financial support for the respondents in our sample while they were attending university as an undergraduate. As may be seen from the table, the first most important source of financial support is part-time and/or summer work at 38.0 per cent. This is very closely followed by support from parents or relatives at 36.6 per cent. Part-time and/or summer work remains the major factor at 40.3 per cent where second most important sources of financial support are considered. It is followed next by parents or relatives at 19.1 per cent. The third most important source of financial support is own savings at 23.9 per cent. This is closely followed by parents or relatives at 22.4 per cent which is followed by scholarships, grants, bursaries, etc. at 21.0 per cent.

Table 5:1

Undergraduate University

	Percentage
Toronto	54.4
Queen's	19.2
McMaster	21.2
Waterloo	4.4
Total N	4041

Table 5:2

Undergraduate Degree Obtained

	Percentage
B.A. General	60.7
B.A. Honours	20.2
B.Sc. General	10.0
B.Sc. Honours	7.1
Other	1.9
Total N	3991

Table 5:3

Year of Graduation

	Percentage
1960	18.9
1964	30.8
1968	46.8
No Answer	3.5
Total N	4041

Table 5:4

Other Post-Secondary Education
Obtained Before University

Percentage	
Yes	10.8
No	89.2
Total N	4041

Table 5:5

Institution Where Other Post-Secondary
Education Obtained Before University

	Percentage
Teachers College	61.0
Ryerson Polytechnical Institute	7.8
CAAT	2.6
Other Public Post-Secondary Institute	10.9
Other Private Post- Secondary Institute	7.1
Other	10.5
Total N	3719

Table 5:6

Major Field of Study

	Percentage
Humanities	42.8
Social Sciences	30.4
Natural Sciences	22.7
Other	4.1
Total N	4039

Table 5:7

First Major Subject

	Percentage
Classics (including Latin, Greek)	1.7
English (language and literature)	18.3
French	7.3
Other Languages (including linguistics, German, Russian, Spanish, Slavic languages, etc.)	1.5
Fine Art, Theatre or Music (including speech, drama, art, sculpture, etc.)	1.9
History	10.0
Philosophy (including logic, philosophy of science, etc.)	2.4
Religion Studies (theology)	0.4
Mathematics (humanities)	1.2
Other Humanities (including Asian studies, art history, Islamic studies, medieval students, near Eastern studies, etc.)	0.5
Anthropology and Archaeology	1.6
Psychology (including clinical, experimental, social counselling and guidance, etc.)	11.4
Sociology	3.4
Geography	4.0
Political Science	4.8
Economics (including business administration, etc.)	4.4
Other Social Sciences (including international studies, political economy, urban and community studies, urban and regional planning, industrial relations, etc.)	0.5
Mathematics (including applied mathematics, statistics, computer science, etc.)	7.0
Physics	3.6
Chemistry	4.7
Astronomy	0.2
Zoology	4.4
Botany	0.3

Table 5:7 (Cont.)

	Percentage
Other Natural Sciences (including anatomy, physiology, micro-biology, bio-chemistry, virology, food science, biophysics, pharmacology, metallurgy, engineering, geology, etc.)	4.5
Total N	3945

Table 5:8

Status at University

	Percentage
Full-time Student	89.4
Part-time or Extension Student	5.4
Half or More Courses Taken as a Part-time Student	3.5
Less Than Half of Courses Taken as a Part-time Student	1.7
Total N	4041

Table 5:9

Number of Years Respondent Spent in Full-time Attendance
at University Before Receiving Undergraduate Degree

	Percentage
Never a full-time student	11.8
One year	0.6
Two years	0.4
Three years	45.4
Four years	37.4
Five years	3.7
Six years	0.5
Seven years	0.1
Total N	4036

Table 5:10

Number of Years Respondent Resided with Parents
While at University

	Percentage
One year	10.3
Two years	14.1
Three years	44.1
Four years	28.8
Five years	2.4
Six years	0.4
Seven years or more	0.1
Total N	1990

Table 5:11

Respondent's Grade Average During Senior Year

	Percentage
A	11.0
B	73.2
C	15.2
D	0.4
Other	0.2
Total N	4014

Table 5:12

Respondent Changed University, Faculty, Course or Program,
or Major Field of Study While an Undergraduate

	Percentage
Changed none of these	67.4
Changed universities	6.1
Changed faculties	5.0
Changed course or program	18.0
Changed field of study	3.4
Total N	3532

Table 5:13

Year of First Change Made By Respondent
While an Undergraduate

	Percentage
First year	61.6
Second year	29.9
Third year	6.9
Fourth year	0.2
Fifth year	1.3
Total N	1113

Table 5:14

Reasons Why Respondent Changed University, Faculty, Program
or Course, or Major Field of Study While an Undergraduate

	Percentage
Low grades	25.7
Grades high enough to permit transfer	6.0
Dissatisfaction with present university, faculty, program or course, or field of study - preference for another	46.2
Requirements completed for transfer to another university, faculty, program or course, or field of study	2.6
Other	19.5
Total N	1066

Table 5:15

First Three Most Important Sources of Financial
Support for Respondent While Attending University
(%)

	First Most Important	Second Most Important	Third Most Important
Parents or relatives (excluding spouse)	36.6	19.1	22.4
Spouse	1.9	4.7	2.5
Part-time and/or summer work	38.0	40.3	11.3
Full-time employment while studying	6.5	1.1	0.7
Scholarships, grants, bursaries, etc.	6.0	12.8	21.0
Loans	6.7	11.8	17.0
Own savings	2.8	9.7	23.9
Other	1.5	0.5	1.2
Total N	4041	3774	4040

B. Educational Experiences: Effects of Sex and Year of Graduation

This section presents selected tables which show (1) variations in aspects of male respondents' undergraduate educational experiences compared to female respondents' undergraduate educational experiences, and (2) variations in aspects of respondents' undergraduate educational experiences according to their year of graduation. Where significant relationships obtained, further tables with both sex and year of graduation controlled for have been produced.

Among the aspects of undergraduate educational experience to be examined are undergraduate university attended, major field of study, financial support and amount of debt respondent was in at the time of graduation, changes in studies program, and type of undergraduate degree received.

1. Variations in Educational Experiences by Sex

a.) Undergraduate University Attended by Sex

The highest proportion of our female respondents (59.0 per cent) had attended the University of Toronto compared to 51.7 per cent of their male counterparts. Queen's University also had a higher proportion (22.5 per cent) of female respondents compared to male (16.9 per cent), whereas the reverse was the case for both McMaster University (females, 16.6 per cent; males 25.1 per cent) and University of

Waterloo (females, 1.9 per cent; males, 6.4 per cent). (See Table 5:16.) The table is statistically significant.

b.) Major Field of Study by Sex

With regard to enrolment in major field of study by sex, we see in Table 5:17 that females, proportionately to males, favour the humanities (58.8 per cent of the female respondents were enrolled in this field compared to 33.6 per cent of the male respondents). The social sciences presented a more even split of sex representation (males, 32.7 per cent; females, 30.5 per cent). Males favoured the natural sciences more than females (males, 33.6 per cent; females, 10.8 per cent). The table is statistically significant.

c.) Financial Support by Sex

Turning to Table 5:18, we see that a different pattern of financial support is operating for males than for females. Females have relatively more financial support than males from parents or relatives (males, 26.0 per cent; females, 51.6 per cent), and they depend less upon part-time and/or summer work than males (males, 48.5 per cent; females, 25.9 per cent). Furthermore, males are more likely than females to be in debt by the time of graduation (see Table 5:19). It appears that females are, in general, more financially "sponsored" than males. Both tables are statistically significant.

d.) Changes in Studies by Sex

Although there are no significant differences between the sexes regarding patterns of change in university, faculty, course or program, or major field of study while an undergraduate (see Table 5:20), the reasons given for such changes do vary on sex lines. Table 5:21 shows that males mention low grades more than females (males, 40.8 per cent; females, 19.9 per cent) whereas females emphasize "dissatisfaction with university faculty, program, field of study, etc." more than males (males, 46.5 per cent; females, 72.1 per cent).

Table 5:16

Undergraduate University Attended by Sex

(%)

	Male	Female
Toronto	51.7	59.0
Queen's	16.9	22.5
McMaster	25.0	16.6
Waterloo	6.4	1.9
Total N	2218	1726

Chi Square = 101.81340 with 3 Degrees of Freedom.
Significance = 0.0

Table 5:17

Major Field of Study by Sex
(%)

	Male	Female
Humanities	33.6	58.8
Social sciences	32.7	30.5
Natural sciences	33.6	10.8
Total N	2137	1655

Chi Square = 340.23804 with 3 Degrees of Freedom.
Significance = 0.0

Table 5:18

Respondent's Most Important Source of
Financial Support by Sex (%)

	Male	Female
Parents, relatives	26.0	51.6
Spouse	2.6	1.0
Part-time and/or summer work	48.5	25.9
Full-time work	8.6	4.1
Grants, bursaries, etc.	4.7	7.8
Loans	7.1	6.4
Savings	2.4	3.2
Total N	2212	1725

Chi Square = 358.66260 with 7 Degrees of Freedom.
Significance = 0.0

Table 5:19

Amount of Debt Respondent Was In
At Graduation by Sex (%)

	Male	Female
None	50.0	67.2
Under \$500	11.7	6.7
\$500 to \$1,000	15.6	13.3
\$1,000 to \$2,000	13.6	8.8
\$2,000 to \$4,000	6.9	3.6
Over \$4,000	2.3	0.4
Total N	2184	1674

Chi Square = 137.13295 with 5 Degrees of Freedom.
Significance = 0.0

Table 5:20

Changed During Undergraduate Education by Sex
(%)

	Male	Female
Changed none	68.1	66.6
Changed university	6.4	5.8
Changed faculty	7.3	1.9
Changed course	14.5	22.6
Changed major field	3.7	3.1
Total N	1547	1948

Table 5:21

Reason for Respondent's Change by Sex

(%)

	Male	Female
Grades too low	40.8	19.9
Grades high enough to transfer	8.5	6.1
Dissatisfaction with university, faculty, program, etc.	46.5	72.1
Requirements completed for transfer to another university, faculty, program, etc.	4.2	1.9
Total N	495	362

Chi Square = 57.63344 with 3 Degrees of Freedom.
 Significance = 0.0000

2. Variations in Educational Experience by Year of Graduation

a.) Major Field of Study by Year of Graduation

In Table 5:22, we see that enrolment in the humanities has declined through the years 1960, 1964 and 1968 (1960, 49.1 per cent; 1964, 47.5 per cent; 1968, 41.2 per cent) whereas enrolment in the social sciences and natural sciences has fluctuated through the three time periods but with an overall gain in 1968 for both compared to 1960 (social sciences: 1960, 30.2 per cent, 1964, 27.7 per cent, 1968, 34.9 per cent; natural sciences: 1960, 20.7 per cent, 1964, 24.8 per cent, 1968, 23.9 per cent). Thus, over time, the enrolment in humanities has declined somewhat whereas it has increased in social and natural sciences. A further specification of enrolment patterns is seen in Table 5:23 where sex is controlled for. The findings here are that enrolment in the humanities has not declined for females through the three time periods but has for males. In fact, this table shows that enrolment patterns by major field of study have, for females, remained static through the three time periods and that any changes to be observed have been made in the male sector. The trend in male enrolment, then, is toward a move out of the humanities with the strongest gains made in social sciences followed by natural sciences. Table 5:22 is statistically significant. Table 5:23 is statistically significant for males but not for females.

Turning to Table 5:24, we see that the move to science by male students is substantiated by an increase in B.Sc. general degrees (1960, 0.7 per cent; 1964, 14.9 per cent; 1968, 22.1 per cent) and a decline in B.A. general undergraduate degrees. Again, this pattern does not hold for females, whose undergraduate degree patterns have remained much more static through the years. The table is statistically significant.

b.) Changes in Financial Support

Table 5:25 indicates that the role of parents and relatives in financially supporting students has decreased in the eight year period (1960 to 1968) from 48.9 per cent in 1960 to 31.8 per cent in 1968. Part-time and/or summer work as a source of financing has shown an increase from 33.3 per cent in 1960 to 40.0 per cent in 1968. There has been little change in the degree of support from grants and bursaries but financial support from loans has increased from 1.1 per cent in 1960 to 11.5 per cent in 1968. The table is statistically significant.

Table 5:22

Major Field of Study by Year of Graduation

(%)

Field of Study	1960	1964	1968
Humanities	49.1	47.5	41.2
Social sciences	30.2	27.7	34.9
Natural sciences	20.7	24.8	23.9
Total N	702	1182	1807

Chi Square = 25.37236 with 4 Degrees of Freedom.
Significance = 0.0

Table 5:23

Major Field of Study by Year of Graduation,
Controlling for Sex (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Humanities	42.9	36.3	28.0	57.0	62.4	57.4
Social sciences	27.5	29.0	37.2	33.8	26.2	32.0
Natural sciences	29.5	34.8	34.7	9.3	11.3	10.7
Total N	396	673	980	302	503	816

Chi Square for Males = 35.45006 with 4 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 6.98208 with 4 Degrees of Freedom.
Significance = 0.1368

Table 5:24

Undergraduate Degree Received by Year of
Graduation, Controlling for Sex (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
B.A. general	68.8	52.6	50.6	71.4	69.7	71.9
B.A. honours	23.7	19.3	17.1	27.4	24.5	20.5
B.Sc. general	0.7	14.9	22.1	0.6	3.5	4.3
B.Sc. honours	7.2	13.2	10.0	0.6	2.3	3.2
Total N	417	690	1003	318	518	829

Chi Square for Males = 121.49022 with 6 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 21.55299 with 6 Degrees of Freedom.
Significance = 0.0015

Table 5:25

Respondent's Most Important Source of Financial
Support By Year of Graduation (%)

	1960	1964	1968
Parents, relatives	48.9	39.1	31.8
Spouse	2.6	2.1	1.6
Part-time and/or summer work	33.3	39.0	40.0
Full-time work	5.0	6.3	7.4
Grants, bursaries, etc.	5.6	7.1	5.6
Loans	1.1	3.5	11.5
Savings	3.5	2.8	2.6
Total N	736	1204	1830

Chi Square = 172.94298 with 12 Degrees of Freedom.
Significance = 0.0

C. Financial Support and Grades: Other Variables Considered

In our further analysis of undergraduate experience in terms of selected control variables, relationships between most important source of financial support while an undergraduate and socio-economic background and between grade average in final year and socio-economic background emerge as worthy of note. In Table 5:26, most important source of financial support while an undergraduate is cross-tabulated with socio-economic background measured in terms of father's occupation which has been dichotomized into high and low categories in terms of the Porter-Pineo occupational prestige scale. As may be seen from this statistically significant table, respondents from higher socio-economic backgrounds were twice as likely as those from lower socio-economic backgrounds to have considered financial support from parents or relatives as the most important way of financing their undergraduate education. As might be expected, respondents from lower socio-economic backgrounds placed more emphasis on part-time and/or summer work, full-time work and loans. Turning next to Table 5:27, we find that respondents from lower socio-economic backgrounds are slightly less likely to obtain an A average and slightly more likely to have obtained a C or D average. We must remember, however, that these grade averages are self-reported and must be treated with some caution.

Table 5:26

Most Important Source of Financial
Support by Father's Occupation
(%)

Source	Socio-Economic Background	
	Low	High
Parents, relatives	25.1	52.8
Spouse	2.3	1.4
Part-time and/or summer work	42.5	31.6
Full-time work	9.5	2.3
Grants, bursaries, etc.	7.0	4.4
Loans	8.9	3.7
Savings	3.2	2.3
Total N	2246	1669

Chi Square = 363.56909 with 7 Degrees of Freedom.
Significance = 0.0

Table 5:27

Grade Average of Senior Year by Father's Occupation
(%)

	Low	High
A	9.7	12.6
B	73.6	73.4
C or D	16.7	14.1
Total N	2234	1663

Chi Square = 11.33016 with 2 Degrees of Freedom.
Significance = 0.0035

Chapter VI

Patterns of Labour Market Involvement

Introduction

Chapter VI is concerned with the patterns of the labour market involvement experienced by our respondents after receiving their undergraduate degree. The chapter falls into four major sections. The first is concerned with the labour market experiences of our respondents prior to graduation, that is, jobs held while obtaining a degree as a part-time or extension student and full-time jobs held before attending university or during an interruption of their undergraduate career. The next section of the chapter is concerned with the labour market experiences of our respondents after graduation and provides basic distributions within such areas as the point they decided upon a job field, the prestige distribution of their first three full-time jobs after graduation, the types of employers they had in these jobs, the reason why our respondents left these jobs, their overall satisfaction with these jobs, the number of jobs they applied for after graduation and the number of job offers they received, any experiences with unemployment while seeking work, methods used by respondents to obtain their first three jobs, respondents' assessment of the most effective method of finding a job, and, finally, data on respondents' present salary. Section C. of the report is concerned with a further analysis of labour market experiences after graduation with particular reference to variations attributable to year of

graduation and sex. The various areas just referred to in connection with Section B. are examined in greater detail in terms of these further analytic variables. In particular, certain aspects of the first job obtained after graduation are used as a means of comparing how the educational system-labour market linkage has changed for 1968 graduates as compared with their earlier counterparts. Finally, in Section D. of the chapter, additional control variables are introduced into the analysis within the sex and year of graduation analytical framework and their implications are assessed.

The principal findings of this chapter are now summarized in point form.

- (1) A relatively small proportion of the sample held jobs while obtaining their degree as part-time or extension students. Of those who did, the overwhelming proportion were elementary or secondary school teachers.
- (2) A relatively small proportion of the sample held full-time jobs either before attending university or during an interruption of their undergraduate university career. The majority of those who did were to be found in manufacturing industry, service occupations, and elementary or secondary school teaching in that order of importance.
- (3) An increasing tendency is to be found among male 1968 graduates to decide upon an occupational field either

in the later stages of their university career or after graduation. There is a slight trend in the same direction for females although it is much less strong.

- (4) With regard to the prestige of first full-time jobs after graduation, this has shown a marked decline for 1968 male graduates when compared with their earlier counterparts. This decline has also obtained for female 1968 graduates although it is less notable inasmuch as 1960 and 1964 female graduates were not likely to be found in high prestige fields to the same extent that 1960 and 1964 male graduates were.
- (5) The differential between males and females with regard to starting salary of first job has become smaller between the period 1960 and 1968.
- (6) The largest single employer of male 1968 graduates was elementary or secondary school teaching although this had shown a decline from 1964 and 1960. The next largest employer of male 1968 graduates was manufacturing industry which had shown an increase from 1960 and 1964.
- (7) The largest single employer of 1968 female graduates was elementary or secondary school teaching. This had remained essentially constant over the period 1960 to 1968. The second largest employer

of 1968 female graduates were service occupations although this had shown a decline from 1960.

- (8) The major method used by male 1968 graduates in obtaining their first job after graduation was contacting future employers on their own. This was also the most important method for 1968 female graduates. For both male and female 1968 graduates, the use of business contacts in obtaining a job declined between 1960 and 1968. For 1968 male graduates, university placement services represented the third most important method of obtaining first job after graduation. For females, university placement services represented the fourth most important method of obtaining a job.
- (9) With regard to reasons for leaving first job, most male 1968 graduates left their line of work because they were dissatisfied with the type of work or had an opportunity to get into a type of work which appealed to them more. The second and third most important reasons for 1968 male graduates were dissatisfaction not with the type of work performed but the general situation and conditions of the particular job they were in and dissatisfaction with salary. Dissatisfaction with salary had shown an increase for male graduates from 1960 to 1968. Dissatisfaction with the type of work done had shown

a slight decrease from 1960 to 1968 and dissatisfaction with the general situation and conditions of the particular job had remained extremely constant over the time period in question. The fourth most important reason cited by male 1968 graduates for leaving their first job after graduation was to obtain further education. This factor had shown an increase over the period 1960 to 1968.

- (10) For 1968 female graduates, three factors emerged as having approximately equal importance as reasons for leaving first job after year of graduation. The first is the desire to leave one community and move to another; the second was dissatisfaction with the type of work done or an opportunity to get into a type of work which appealed to the respondent more; the third was family reasons. The relative importance attached to family reasons and the desire to move suggest that in many cases, females make these decisions in relationship to their husband's situation. It should also be noted that in all categories of dissatisfaction with work, females have shown an increase when 1960 graduates are compared with 1968 graduates.
- (11) Satisfaction with first job after graduation has shown a decline for males over time with a somewhat less pronounced decline for females.

- (12) With regard to second and third full-time jobs after graduation, our data suggest that, in the aggregate, where 1960 and 1964 graduates, particularly males, moved on to second or third jobs, they tended to improve the prestige ranking of their jobs. An examination of the data for 1968 graduates suggests that in fact when 1968 graduates enter second or third jobs, they either remain within the same prestige range or drop.
- (13) Where second or third jobs are concerned, both male and female 1968 graduates show a pattern of dropping out of the elementary or secondary school employment sector to a greater extent than their earlier counterparts.
- (14) With regard to respondents' reasons for leaving second and third jobs, many more 1968 graduates cite the factor of being laid off than their earlier counterparts. This relationship is much more pronounced for males than it is for females although it is showing an increase in both cases over time.
- (15) 1968 graduates are notably less likely to be highly satisfied with their second and third jobs after graduation than their earlier counterparts. This dissatisfaction is more pronounced among males than females.
- (16) 1968 graduates, both male and female, are applying

for more jobs than their 1960 or 1964 counterparts.

They are not, however, receiving more job offers.

- (17) 1968 graduates, both male and female, are reporting more experiences with unemployment while seeking work than their 1960 or 1964 counterparts.
- (18) Further controls for respondents' socio-economic background, degree program, field of study and self-reported grade average produced relatively few variations of consequences within the major analytical framework of sex and year of graduation. The clear inference we draw from our analysis is two-fold:
- (a) as might be expected, sex makes a critical difference in terms of labour market opportunities and experiences, (b) the labour market situation has indeed changed for the holder of the B.A. or B.Sc. degree in the direction of such degrees having considerably less labour market value than in the past.

A. Labour Market Experiences Prior to Graduation

Although the principal focus of this study is the types of labour market experiences our respondents had after receiving their undergraduate degree, we nonetheless gathered data on two types of labour market experiences our respondents had prior to receiving this degree. The first of these was concerned with full-time jobs held by the respondent while obtaining his or her undergraduate degree by part-time or extension study; the second was concerned with full-time jobs held by a respondent for longer than four months either before attending university or during an interruption in his or her undergraduate education. The tables described in this section are to be found in Appendix 5.

As may be seen from Table 6:1, of over 4,000 respondents to the questionnaire, only 384 held one job while obtaining their degree as a part-time or extension student. The number holding two or more such jobs is so small that we have not reported on second jobs as a separate category. As may be seen from Table 6:1, the overwhelming majority of respondents who held a full-time job while obtaining their degree as a part-time or extension student were to be found in the elementary or secondary school teaching sector.

Table 6:2 reports the findings on full-time jobs held by respondents either before entering university or during an

interruption of their undergraduate university career. Again, as may be seen from the table, the number of respondents having such labour market experiences relative to the total sample is quite small, in this case being 375 out of over 4,000 respondents. As may be seen from Table 6:2, the distribution of the respondents in terms of employment categories is quite different than it was for the aforementioned table. In this case, manufacturing industry emerges as the principal employer, followed closely by service industries, with elementary or secondary school teaching coming in as a third. The number of respondents holding two or more full-time jobs prior to attending university or during an interruption in their undergraduate university career was again so small that a separate analysis has not been conducted.

B. Labour Market Experiences After Graduation: Basic Distributions

We now proceed to the major focus of the report, the labour market experiences of our respondents after graduation. In this section, we provide various details on these labour market experiences for the entire sample. These details relate to such areas as the point at which a respondent decided to enter his or her first job field, information on various characteristics of the first three full-time jobs held by respondents after graduation, tables pertaining to job seeking and finding, and, finally, a table providing salary information. The tables described in this section are to be found in Appendix 5.

1. Deciding on a Job Field

As may be seen from Table 6:3, 25.3 per cent of respondents had decided on their job field before entering university. In the first and second years of university, less than 11 per cent decided upon a job field; however, this percentage rose to 17.3 per cent in third year of university, while 11.7 per cent decided in the fourth year. The largest single percentage, 26.5 per cent, decided on their job field after graduation.

2. Three Jobs After Graduation

The following information is now provided for the entire sample with regard to three full-time jobs held after graduation: (a) the prestige ranking of the job in terms of the Porter-Pineo occupational prestige scale; (b) types of employers the respondent had for these first three jobs; (c) the reasons why the respondent left any of the first three jobs in question; and (d) the respondent's satisfaction with the first three jobs held.

With regard to those respondents having more than three full-time jobs after graduation, we have to report that only 8.9 per cent of our respondents held fourth full-time jobs after graduation. In the case of fifth jobs, this diminished to 2.8 per cent of the sample. In view of the small numbers involved, a separate analysis of these further jobs has not been conducted.

In Table 6:4, it may be seen that the majority of the respondents' first jobs fell within the 50 to 70 range on the Porter-Pineo prestige scale. This trend is much the same for second and third jobs held, suggesting that, for the sample as a whole, there is not a dramatic degree of upward occupational mobility through changing jobs.

Table 6:5 shows data dealing with the types of employers respondents had for their first three jobs. We can see from this table that the single largest employer of university undergraduate manpower is the elementary or secondary school

teaching sector. In the first job category, for example, 48.3 per cent of respondents were found in elementary or secondary school teaching. Comparing this with all respondents falling in the third job category, we can see that a relatively smaller proportion, 34.7 per cent, were to be found in elementary or secondary school teaching. The service occupations account for 15.3 per cent of respondents in the first job category, 16.2 per cent in the second job category, and 19.3 per cent in the third job category. Overall, the table suggests that for the entire sample, elementary and secondary school teaching is the major form of employment across all jobs with work in the service occupations coming second. The proportion of service to teaching jobs is increased in the third job category as may be seen from the table.

Turning next to Table 6:6, the findings are reported for respondents' reasons for leaving their jobs. The labels used in the table are abbreviated for reasons of space. In their completed form, they are as follows:

1. Fired, laid off, asked directly or indirectly to resign
2. Desired to leave one community or to move to another
3. Dissatisfaction with type of work or opportunity to get into a type of work which appealed to you more
4. Dissatisfied with salary or received an opportunity to earn more
5. Dissatisfied not with type of work performed but with general situation and conditions of that particular job
6. Transfer or promotion with same employer

7. Promotion with more responsibility in the same line of work
8. Desired to travel
9. Family reasons
10. No desire to work in any job
11. To pursue further education
12. Other

Within the first job category, dissatisfaction with the type of work or having the opportunity to get into a more appealing type of work emerges as the principal factor for leaving. This is closely followed by family reasons which is followed by the desire to move and general dissatisfaction with the conditions of the job. In the second job category, we find that family reasons emerge as the principal reason for leaving with dissatisfaction with work and the opportunity to get into a more appealing type of work following second. As will be seen in subsequent more detailed tables, females are much more likely to cite family reasons than males. In general, throughout the table the major factors for leaving continue to be family reasons, dissatisfaction with work and the opportunity to get into a more appealing type of work and the desire to move. It should also be noted that the reason "transfer or promotion with same employer" accounts for only 6.8 per cent of reasons for leaving within the first job category but has risen to 12.6 per cent by the time the third job category is reached.

Turning next to Table 6:7, data are presented for the entire sample on respondents' satisfaction with the first three jobs held. As may be seen from this table, there is

little by way of a dramatic trend toward increased satisfaction in third jobs as opposed to first jobs although there is a tendency for a greater proportion in the third job category to be found at the very satisfied end of the scale as opposed to respondents in the first job category. As may be seen from the table, the majority of respondents place themselves toward the satisfied end of the scale in assessing their jobs.

3. Job Seeking and Finding

The next section is concerned with job seeking and finding and provides information for the total sample in the following areas: (a) number of jobs the respondent applied for; (b) number of job offers the respondent received; (c) whether or not the respondent had any experience with unemployment; (d) methods used by the respondent to obtain first three jobs; and (e) the respondent's most effective job seeking method.

Turning first to Table 6:8, it may be seen that 46.8 per cent of respondents applied for between one and two jobs; 22.9 per cent applied for between three and four; 11.4 per cent applied for between five and six jobs; 4.4 per cent applied for between seven and eight jobs; and 14.6 per cent applied for nine or more jobs. Comparing this table with Table 6:9, it may be seen that the number of jobs the respondents applied for outweighs the number of offers

actually received. As may be seen from Table 6:9, almost 80 per cent of respondents received between one and two job offers.

Table 6:10 represents respondents' replies to a question in which they were asked to record any periods of unemployment they had experienced while they were looking for work since graduation. As may be seen from this table, the majority of respondents (83.6 per cent) do not consider themselves to have ever been unemployed.

Table 6:11 provides information on the methods used by respondents to obtain their first three jobs. Within the first job category, approaching possible employers on one's own emerges as the most important method at 34.5 per cent. It is followed by newspaper or other advertisements, 20.9 per cent, which is followed by business contacts through colleagues or contacts in the same job field at 14.1 per cent. University employment services are fourth at 11.4 per cent. As might be reasonably expected in the second and third jobs, university employment services show a dramatic dropping off whereas with increased experience business contacts in the field show an increase. Similarly, promotion with the same employer shows a substantial increase.

Table 6:12 provides the data for the entire sample on respondents' assessment of the single most effective job seeking method. As may be seen here, approaching possible employers on one's own emerges as the most significant

factor at 39.3 per cent. Business contacts and personal contacts account for 25.0 per cent and 9.0 per cent respectively. Newspaper or other advertisements were considered most effective by 14.6 per cent of the sample. Government employment agencies received only a 1.0 per cent score with private employment agencies just twice over this at 2.1 per cent. University placement services were considered to be effective by only 5.9 per cent of the respondents in the sample.

4. Salary

Finally, as far as basic distributions are concerned, Table 6:13 provides information on respondents' present salary for the entire sample. It must be remembered that this distribution is based on both males and females who have been in the labour force for different periods of time, having graduated in either 1960, 1964 or 1968. Nonetheless, it does provide data on the general income distribution of such a group. As may be seen from the table, the largest concentration (34.2 per cent) is in the \$7,500-\$10,000 range. The next largest (21.3 per cent) is in the \$10,000-\$12,500 range. Of the respondents, 13.8 per cent earn between \$12,500 and \$15,000 while in the "greater than \$15,000" category, we find 10.4 per cent of respondents.

D. Labour Market Experiences After Graduation: Trend Analysis Within Sex Groups

We now extend our concern with the labour market experiences of our respondents after graduation by continuing our analysis in terms of two major defining variables. The first of these is year of graduation, that is, whether or not the respondent graduated in 1960, 1964 or 1968. The second is whether they are male or female. The choice of the first variable reflects our concern with attempting to conduct a trend analysis. The choice of the second variable is a reflection of the critical difference sex makes in terms of opportunities and career patterns within the labour market situation.

1. First Full-Time Job After Graduation

A major concern in this report is to assess the extent to which the labour market situation has changed between 1960 and 1968 for the holder of an arts and science university undergraduate degree. Examining data on the first full-time job obtained after graduation is the way we approach the analysis of these patterns of change. Specifically, by comparing the first full-time job experiences of male and female graduates from all three graduating years, we will identify patterns of change over time in the prestige ranking of such jobs, the salaries involved, the types of

employers, how the job was obtained, why it was left, and how satisfied the respondent was with the job.

Turning first to Table 6:14, data are presented on the point at which respondents decided to enter their first job field after graduation. The data show a moderate tendency for males and a weak tendency by females to make the decision at a later point over time. For example, in 1960, 39.6 per cent of males decided on their job field in fourth year or after graduation. For 1968 graduates, this proportion had risen to 48.8 per cent. By way of comparison, 37.9 per cent of 1960 female graduates made this decision in fourth year or after graduation as compared with 43.2 per cent of 1968 female graduates. The table is statistically significant for males but not for females.

Turning to Table 6:15, we can see that the prestige ranking of the first full-time job after graduation has declined by year of graduation. For example, 13.6 per cent of 1960 male graduates were able to obtain positions in the highest register of the occupational prestige scale. This percentage had risen slightly in 1964 to 14.2 per cent. In 1968, however, it had diminished dramatically to 0.9 per cent. The effect for females is less dramatic, in large part because even in 1960 females were not to be found to any extent in higher prestige occupations. However, overall, we may see that the trend with females is also in the direction of the decline of the prestige of the first full-time job

after graduation. Both male and female tables are statistically significant.

Turning next to Table 6:16, we see data presented on the starting salary of the first job held after graduation by year of graduation. Due to the fact, of course, that starting incomes have increased over the years, the only type of valid comparison which may be made with a table of this sort is by comparing males in one year group with females in the same year group. An examination of the table shows that the tendency for males to earn larger salaries than females is diminishing somewhat. For example, in the \$5,000-\$7,500 category in 1960, 33.4 per cent of males were found in this category as compared with 20.1 per cent of females. In 1968, however, 55.2 per cent of males were found in this category and 57.9 per cent of females were found in this category. In 1960, in the \$7,500-\$10,000 range, 6.3 per cent of the males were found in this category as compared with 1.1 per cent of females. In 1968 in the same income category, 25.9 per cent of males were found in the category and 17.3 per cent of females were found in that category. Both the tables for males and females are statistically significant.

In Table 6:17, data are presented on the type of employer in the first job after graduation, by year of graduation. For males, we can see that there has been a decline in the proportion of males found in the elementary or secondary school teaching sector although it still remains the principal

sector of employment. In 1960, for example, 44.9 per cent of males were found in either elementary or secondary school teaching. In 1968, this percentage was 38.3. A greater proportion of males are to be found in manufacturing industry in 1968, the percentage being 13.1 as compared with 8.3 per cent in 1960. Another growth area is that of finance where 10.4 per cent of all males in the sample were employed in 1968 as compared with 5.1 per cent of 1960 graduates. The proportion of males in service occupations has shown a decline over time. For 1960 graduates, 17.6 per cent were employed in the service sector. For 1968 graduates, the percentage was 12.7. For females, elementary or secondary school teaching still remains the principal form of employment, and this remains very constant, being 53.3 per cent in 1960, 53.7 per cent in 1964 and 53.8 per cent in 1968. Little dramatic change is to be observed in other categories for females with the exception of the service sector where the percentage employed has declined from 21.5 per cent in 1960 to 14.4 per cent in 1968. The table for males is statistically significant. The table for females is not. As the interpretation of the female table suggests, little change has taken place over time in females' employment patterns as far as sector of employment is concerned.

Table 6:18 presents data on how first full-time job after graduation was obtained by year of graduation. For male graduates in any year of graduation, we can see that

"contacting future employers on own" emerges as the principal means of obtaining a job. In 1960, 32.3 per cent of graduates used this method; in 1964, it had risen to 35.6 per cent; and in 1968, it was 34.5 per cent. The second most important method of obtaining a job within each year of graduation was advertisements. In 1960, this accounted for 21.0 per cent of how jobs were obtained; in 1964, it was 19.4 per cent; and in 1968, it was 18.4 per cent. Over the years, a greater proportion of male graduates have found their jobs through university placement services. In 1960, only 9.8 per cent of graduates found their jobs this way; in 1964, this percentage had risen to 10.5 per cent; in 1968, it was 14.6 per cent. For 1968 male graduates, university placement services emerged as the third most effective way of obtaining a job. For 1960 graduates, business contacts constituted the third most effective way of obtaining a job, being 19.2 per cent. In 1964, this percentage had dropped to 16.2 and in 1968, only 8.9 per cent of male graduates had found their job through business contacts. For female graduates, the findings are much the same; "contacting future employers on own" was the most important means of finding a job within all graduating years. Similarly, the use of advertisements was the second most important method in all years. For 1968 female graduates, business contacts were the third most effective way of obtaining their first full-time job. However, this factor had declined from 16.7 per cent in 1960 to

12.1 per cent in 1968. Of 1968 female graduates, 11.4 per cent used university employment services to find their first full-time job after graduation, making this the fourth most important method. This represents an increase from 9.0 per cent in 1960. Tables for both males and females are statistically significant.

Table 6:19 presents data on why respondents left their first full-time job after graduation. For 1968 male graduates, "dissatisfaction with the type of work done or opportunity to get into a type of work which appealed to you more" emerges as the most important reason for change. In 1960, this factor accounted for 19.4 per cent of the cases, the same as it was in 1964 but representing a drop from 23.4 per cent in 1960. "Dissatisfaction with salary" and "dissatisfied not with type of work performed but with general situation and conditions of that particular job" were the second and third most important factors for change in 1968. In the case of salary dissatisfaction, this had increased from 7.0 per cent and 8.0 per cent in 1960 and 1964 respectively to 15.3 per cent in 1968. The more general kind of dissatisfaction had accounted for 15.1 per cent of cases in 1960 and had dropped to 11.5 per cent in 1964, rising again to 15.6 per cent in 1968. In summary, we can say that in terms of these three measures of occupational dissatisfaction, they have either remained relatively constant over all three years of graduation or have increased. Another

factor for change which has shown an increase over the years is that of leaving to seek further education. Referring to males only, in 1960 this accounted for 5.0 per cent of cases and had risen to 10.3 per cent in 1968. The increase in salary dissatisfaction is likely to be a reflection of increased inflationary pressures over the decade of the 60s whereas the increase in those going on to further education reflects the increasing educational upgrading of many of the jobs sought by graduates of post-secondary education. For male graduates, two factors that have shown a decline are the desire to move from one community to another and "promotion with more responsibility in the same line of work." Some differences should be noted for female graduates. If one examines the "desire to move" and "family reasons," it will be noted that these assume more importance for females than for males. We would suggest that this reflects the tendency for employment in the labour force or long term career considerations to be secondary for females when compared with such considerations as raising a family or accompanying husbands who have been transferred. It should also be noted that whereas the categories of "dissatisfaction with type of work done" and "general dissatisfaction" had either declined somewhat or remained relatively constant for males; for female graduates both of these categories have shown an increase. In general, these findings suggest that as more females come to value longer-term involvement in the

labour force and become more aware of male/female differentials in employment opportunities and experiences, such patterns of dissatisfaction will continue to show an increase. Tables for both males and females are statistically significant.

Table 6:20 provides data on respondents' satisfaction with first full-time job after graduation by year of graduation. Respondents had been asked to evaluate on a scale from 1 to 7, where 1 represents "not a job I wanted at all" and 7 represents "my ideal job," their satisfaction with their first full-time job after graduation. As may be seen from the table, both male and female respondents tend to fall more toward the "satisfied" end of the continuum although whereas this tendency has decreased slightly for males, it has increased slightly for females over time. The table for males is statistically significant, but not for females.

Table 6:14

Point at Which Respondent Decided to Enter First
Job's Field by Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Before university	27.6	28.8	24.2	27.2	28.3	28.0
First year of university	3.4	3.0	3.2	4.8	2.4	3.4
Second year of university	9.0	11.4	8.0	9.7	6.2	4.7
Third year of university	20.4	17.9	15.9	20.3	21.4	20.8
Fourth year of university	13.1	14.9	16.2	8.6	9.3	11.4
After graduation	26.5	23.9	32.6	29.3	32.5	31.8
Total N	388	624	712	290	453	683

Chi Square for Males = 20.93585 with 10 Degrees of Freedom.
Significance = .0215

Chi Square for Females = 14.023781 with 10 Degrees of Freedom.
Significance = .1719

Table 6:15

Prestige Ranking of First Full-Time Job After
Graduation by Year of Graduation
(%)

As Rated by Porter- Pineo Occupational Prestige Scale						
	1960	1964	1968	1960	1964	1968
1-19	0.8	0.2	0.7	0.0	0.0	1.4
20-29	1.1	1.0	1.6	0.4	0.4	1.3
30-39	0.3	0.0	0.0			
40-49	5.7	3.6	12.2	7.2	5.7	8.8
50-59	23.8	21.4	32.0	41.7	34.8	39.5
60-69	53.1	57.0	48.5	48.9	55.4	48.0
70-79	1.6	2.6	4.1	0.4	1.1	0.4
80-99	13.6	14.2	0.9	1.4	2.6	0.7
Total N	369	611	703	276	457	719

Total N = 3135

Chi Square for Males = 149.35831 with 14 Degrees of Freedom.
Significance = 0.0

Chi Square for Females = 164.24561 with 12 Degrees of Freedom.
Significance = 0.0

Table 6:16

Starting Salary of First Job
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Less than \$2,500	2.3	2.4	1.9	4.4	3.4	3.2
\$2,500-5,000	54.7	22.9	10.0	73.7	46.8	19.0
\$5,000-7,500	33.4	55.8	55.2	20.1	42.8	57.9
\$7,500-10,000	6.3	12.1	25.9	1.1	5.7	17.3
\$10,000-12,500	2.0	4.9	4.3	0.4	1.3	1.9
\$12,500-15,000	0.5	0.5	1.8	0.0	0.0	0.3
Greater than \$15,000	0.8	1.6	0.8	0.4	0.0	0.4
Total N	395	638	721	274	472	741

Chi Square for Males = 323.21191 with 12 Degrees of Freedom. Significance = 0.0

Chi Square for Females = 41.81615 with 12 Degrees of Freedom. Significance = 0.0000

Table 6:17

Type of Employer in First Job
by Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Federal government	5.9	3.8	6.7	2.0	4.4	3.4
Provincial government	3.7	2.7	4.0	2.3	4.8	3.8
Municipal government	0.7	0.9	1.9	3.0	3.0	3.5
Elementary or secondary school	44.9	48.5	38.3	53.3	53.7	53.8
University	5.9	9.2	2.9	6.3	9.1	8.0
Other educational institution	0.5	0.5	1.3	0.3	0.2	0.7
Manufacturing industry	8.3	7.6	13.1	1.7	2.0	2.4
Transportation and communication	1.7	1.5	3.5	3.3	2.4	2.1
Trade	5.6	5.0	5.3	3.0	2.4	4.5
Finance	5.1	5.3	10.4	3.3	3.0	3.5
Service	17.6	15.1	12.7	21.5	14.9	14.4
Total N	408	662	750	302	497	764

Chi Square for Males = 86.94049 with 20 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 23.32333 with 20 Degrees of Freedom.
Significance = 0.2732

Table 6:18

How First Job Was Obtained
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Personal contacts	8.1	5.9	8.0	8.4	5.1	6.8
Business contacts	19.2	16.2	8.9	16.7	14.6	12.1
Government agency	1.3	1.1	2.8	3.0	1.8	1.9
Private agency	0.8	2.0	3.1	2.7	1.0	2.9
University placement service	9.8	10.5	14.6	9.0	10.1	11.4
Advertisements	21.0	19.4	18.4	27.1	23.3	20.9
Contacting future employers on own	32.3	35.6	34.5	27.8	37.5	36.7
Promotion	1.0	3.9	5.8	2.3	1.8	2.8
Other	6.6	5.4	3.9	3.0	4.7	4.5
Total N	396	648	721	299	493	752

Chi Square for Males = 65.92520 with 16 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 26.98770 with 16 Degrees of Freedom.
Significance = 0.0416

Table 6:19

Reason Left First Job By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Laid off	4.7	1.5	5.3	1.8	1.2	2.2
Desired to move	11.0	10.8	5.6	16.8	13.3	17.0
Dissatisfaction with type of work done	23.4	19.3	19.4	8.0	14.5	16.5
Salary dissatisfaction	7.0	8.0	15.3	2.2	1.2	4.7
General dissatisfaction	15.1	11.5	15.6	9.1	8.8	13.5
Transfer or promotion	7.7	12.3	8.2	1.8	5.0	4.7
Promotion with responsibility	11.7	12.8	4.4	1.8	4.5	3.2
Desired to travel	2.0	3.8	4.4	7.7	6.6	7.5
Family reasons	2.0	3.5	1.8	38.0	28.9	16.5
No desire to work at all	0.0	0.0	0.6	1.5	0.7	0.5
Further education	5.0	6.0	10.3	4.0	3.6	4.2
Other	10.4	10.8	9.1	7.3	11.8	9.5
Total N	299	400	340	274	422	401

Chi Square for Males = 70.42749 with 22 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 71.26038 with 22 Degrees of Freedom.
Significance = 0.0000

Table 6:20

Satisfaction With First Job
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Dissatisfied	3.8	2.5	4.4	5.5	6.3	8.2
	5.1	3.3	4.4	6.8	5.9	5.1
	10.0	5.9	11.3	10.2	9.2	9.0
	12.1	14.9	18.1	16.7	15.1	12.8
	24.4	29.3	25.2	26.6	23.5	25.5
	23.8	21.4	19.4	15.4	21.0	19.0
Ideal Job	20.8	22.9	17.1	18.8	19.1	20.4
Total N	390	646	742	293	477	742

Chi Square for Males = 35.50429 with 12 Degrees of Freedom.
Significance = 0.0004

Chi Square for Females = 11.11352 with 12 Degrees of Freedom.
Significance = 0.5192

2. Second and Third Full-Time Jobs Held After Graduation

In addition to the first full-time job after graduation, data were gathered on other full-time jobs after graduation. The data so gathered, while useful for other purposes, are not a desirable way of assessing how the labour market situation has changed for graduates from different years since it is clear that earlier graduates have had more time and opportunity to obtain further full-time jobs after their first post-graduation full-time job. In this sense, our 1960, 1964 and 1968 cohorts become less comparable with regard to the question of labour market opportunities after graduation once one goes beyond first full-time job. However, the data may be analyzed in other ways. In particular, one may examine the population of those who did obtain second or third full-time jobs after graduation and see what difference sex and year of graduation variables make. This further analysis will be conducted for the second and third full-time jobs after graduation. As will be recalled from our earlier discussion, the number of respondents holding more than three full-time jobs after graduation becomes so small that a separate analysis is of questionable value.

With regard to these second and third full-time jobs after graduation, attention will be given to the following factors: the prestige ranking of the job, the type of employer, how the respondent found the job, the reason why the job was left, and, finally, the respondent's overall

satisfaction with the job. The analysis of these tables will be primarily concerned with pointing up how the situation has changed for 1968 graduates in relation to their 1960 and 1964 counterparts.

We begin with Tables 6:21 and 6:22 which provide data on the prestige ranking of second and third full-time jobs after graduation as analyzed in terms of year of graduation and sex. A number of observations may be made from both these tables. Overall, there has been a decline in the prestige ranking of second and third full-time jobs held by both male and female graduates where 1968 graduates are compared with 1960 or 1964 graduates. This decline is more dramatic in the case of males than it is in the case of females. Comparing male 1968 graduates with their 1960 and 1964 counterparts, it should be noted that those 1968 male graduates who have obtained second and third full-time jobs after graduation have not, in aggregate terms, moved in increasing numbers into higher prestige jobs, as did their 1960 and 1964 counterparts. In short, these two tables viewed in conjunction with the earlier Table 6:15 suggests that when the 1960 or 1964 graduate went on to obtain a second or third full-time job after graduation, a greater proportion of such graduates moved into higher prestige jobs as a result of the change. The three tables referred to suggest that for 1968 graduates, it is more likely that they will either stay within the same prestige ranking or, in fact,

move down. This situation is much the same for females although less dramatic. The tables are statistically significant for both males and females.

Turning next to the types of employers respondents had for second and third full-time jobs after graduation, it can be seen in both Tables 6:23 and 6:24 that both male and female 1968 graduates are much less likely to remain in elementary or secondary school teaching than their 1960 or 1964 counterparts. For males, manufacturing industry, transportation and communication, trade, and municipal government show increase over time. The university as a source of employment has shown a steady dropping off for males for both second and third full-time jobs after graduation. For second full-time jobs after graduation, those employment sectors claiming a greater proportion of females are the federal government, trade, and finance. However, as will be seen from the table, some of the percentage differences are quite small. With regard to the employment of females in second full-time jobs after graduation, the university as a source of employment accounted for 9.0 per cent in 1960, rising to 13.1 per cent in 1964 and dropping again to 7.2 per cent in 1968. With regard to service occupations, 20.6 per cent of 1960 female graduates found second jobs in this sector. This percentage had dropped to 15.3 in 1964 and risen again to 20.1 per cent in 1968. Examining the data for females in Table 6:24, we can see that where third full-time jobs after

graduation are involved, a dispersion effect obtains. That is, 1968 female graduates are dropping out of elementary or secondary school teaching while increases are to be observed in the areas of municipal government, provincial government, and the service sector. Table 6:23 is statistically significant for both males and females. In the case of Table 6:24, the findings reported are statistically significant for males but not for females. Overall, the trends are quite clear for males with regard to second and third full-time jobs after graduation. These trends are a dropping off in the elementary and secondary school teaching field for 1968 graduates as compared with their 1960 and 1964 counterparts and a growth in the areas of manufacturing industry, transportation and communication, trade, and finance. As we have suggested, the trends for females are less clear although 1968 female graduates show a stronger tendency than their 1960 or 1964 counterparts to drop out of elementary or secondary school teaching.

With regard to methods of obtaining second and third jobs, we can see from Tables 6:25 and 6:26 that contacting future employers on one's own remains the most important single method for 1968 graduates and that this has shown an increase from 1960. With regard to second jobs, it may be seen from the tables that both male and female 1968 graduates place less emphasis on business contacts and are more likely to receive promotions with the same employer than their 1960

counterparts. Where third jobs are concerned, the situation becomes less clear. Whereas the use of business contacts continues to show a decline over time, promotion with the same employer remains approximately constant for females but declines for males. Table 6:25 is statistically significant for both males and females. Table 6:26 is statistically significant for males only.

Turning next to reasons why respondents left their second jobs, we see from Table 6:27 that for males, being laid off has increased dramatically when 1968 graduates are compared with 1960 graduates. This factor has also increased for females, although less dramatically, no doubt in part because there are more sources of natural job attrition in the female case such as leaving to bear or raise children. Dissatisfaction with the type of work done has shown an increase over time for both males and females. Transfer or promotion with responsibility have both shown declines over time for males but have remained relatively constant for females. The number of females in these cases, however, is small. For males in particular, these findings suggest a tightening labour market. Regarding third jobs, Table 6:28 is statistically significant for neither males nor females and therefore its findings must be treated with caution. However, it might be noted that the "laid off" factor shows a continued pronounced increase over time for both males and females.

Finally, Tables 6:29 and 6:30 present data on satisfaction with second and third jobs for both males and females. As is clear from the tables, a decreasing proportion of 1968 graduates, when compared with their earlier counterparts, are finding their second and third jobs to be toward the ideal job end of the continuum. The drop in satisfaction is more pronounced for males than females.

Table 6:21

Prestige Ranking of Second Full-Time Job
 After Graduation by Year of Graduation
 (%)

As Ranked by Porter- Pineo Occupational Prestige Scale	Male			Female		
	1960	1964	1968	1960	1964	1968
1-19	0.0	0.5	2.3	0.0	0.0	1.0
20-29	1.0	1.1	2.3	0.5	0.3	3.0
30-39	1.0	0.8	3.8	2.5	0.3	6.3
40-49	2.7	1.9	4.4	5.5	6.8	14.6
50-59	19.5	17.4	41.3	34.3	31.4	35.4
60-69	55.9	58.7	28.8	49.8	51.2	37.1
70-79	7.4	10.9	6.8	5.5	3.1	2.6
80-99	12.5	8.7	0.4	2.0	2.5	0.0
Total N	297	368	264	201	322	302

Chi Square for Males = 164.24561 with 12 Degrees of Freedom.
 Significance = 0.0

Chi Square for Females = 71.12825 with 12 Degrees of Freedom.
 Significance = 0.0000

Table 6:22

Prestige Ranking of Third Job
By Year of Graduation (%)

As Rated by Porter- Pineo Occupational Prestige Scale	Male			Female		
	1960	1964	1968	1960	1964	1968
1-19	0.6	0.0	3.4	1.9	0.0	3.5
20-29	0.6	0.0	7.3	0.0	1.1	2.3
30-39	0.0	2.0	4.9	3.8	4.0	4.7
40-49	3.5	5.4	7.3	9.4	6.3	12.8
50-59	21.6	19.7	41.5	34.0	31.4	41.9
60-69	52.6	53.7	18.3	40.6	47.4	32.6
70-79	9.9	12.2	4.9	5.7	3.4	2.3
80-99	11.1	6.8	0.0	4.7	0.6	0.0
Total N	171	147	82	106	175	86

Chi Square for Males = 71.12825 with 12 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 25.08636 with 12 Degrees of Freedom.
Significance = 0.0144

Table 6:23

Type of Employer Respondent Had for Second
Job Obtained by Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Federal government	2.7	3.6	7.0	2.5	4.7	8.2
Provincial government	3.1	3.6	3.9	6.0	5.6	5.8
Municipal government	1.0	1.7	5.0	2.5	5.6	5.8
Elementary or secondary school	45.4	47.1	19.8	51.8	43.8	32.4
University	9.2	8.4	1.9	9.0	13.1	7.2
Other post-secondary institution	2.0	1.9	1.6	0.0	1.6	0.7
Manufacturing industry	7.8	8.4	15.5	2.5	2.2	4.1
Transportation and communication	1.7	3.1	8.5	1.5	2.5	3.4
Trade	5.1	6.1	9.3	2.0	3.1	6.5
Finance	4.7	5.0	11.6	1.5	2.5	5.8
Service	17.3	11.1	15.9	20.6	15.3	20.1
Total N	295	359	258	199	320	293

Chi Square for Males = 112.06287 with 20 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 52.37630 with 20 Degrees of Freedom.
Significance = 0.0001

Table 6:24

Type of Employer Respondent Had for Third
Job By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Federal government	5.3	2.9	4.3	4.9	3.0	2.5
Provincial government	4.1	4.4	1.4	4.9	4.9	7.5
Municipal government	0.6	1.5	11.6	2.9	6.7	8.8
Elementary or secondary school	39.1	34.3	13.0	43.1	39.0	21.3
University	12.4	8.0	2.9	8.8	10.4	11.3
Other educational institution	0.6	0.0	1.4	2.0	0.6	2.5
Manufacturing industry	10.1	13.9	17.4	3.9	3.0	2.5
Transportation and communication	3.0	4.4	14.5	2.0	1.8	3.8
Trade	5.9	8.8	17.4	2.9	3.0	3.8
Finance	4.1	8.8	4.3	1.0	4.3	2.5
Service	14.8	13.1	11.6	23.5	23.2	33.8
Total N	169	137	69	102	164	80

Chi Square for Males = 66.50923 with 20 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 19.27867 with 20 Degrees of Freedom.
Significance = 0.5038

Table 6:25

Method By Which Respondent Obtained Second
Job By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Personal contacts	3.5	3.5	6.2	7.8	5.9	4.7
Business contacts	17.5	17.7	6.2	22.4	15.4	12.7
Government agency	1.0	1.2	2.5	2.1	3.6	3.3
Private agency	3.1	2.7	4.1	1.0	2.3	4.3
University place- ment services	2.8	2.9	2.5	5.2	2.3	3.3
Advertisements	20.3	20.6	18.2	22.4	16.3	18.1
Contacting future employers on own	36.7	33.0	43.0	29.2	42.2	41.3
Promotion with same employer	10.5	13.0	15.7	4.2	9.5	9.8
Other	4.5	5.3	1.7	5.7	2.6	2.5
Total N	286	339	242	192	306	276

Chi Square for Males = 33.87480 with 16 Degrees of Freedom.
Significance = 0.0056

Chi Square for Females = 35.26598 with 16 Degrees of Freedom.
Significance = 0.0037

Table 6:26

How Third Job Obtained by
Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Personal contacts	4.3	4.0	0.0	5.3	3.9	1.3
Business contacts	19.3	13.6	10.8	22.1	17.5	15.8
Government agency	0.6	0.8	6.2	1.1	0.6	9.2
Private agency	1.2	5.6	1.5	5.3	5.2	3.9
University placement services	1.2	0.8	1.5	1.1	2.6	1.3
Advertisements	11.8	19.2	20.0	20.0	15.6	11.8
Contacting future employers on own	31.7	27.2	41.5	32.6	42.2	40.8
Promotion with same employer	24.2	26.4	13.8	9.5	8.4	10.5
Other	5.6	2.4	4.6	3.2	3.9	5.3
Total N	161	125	65	95	154	76

Chi Square for Males = 30.82553 with 16 Degrees of Freedom.
Significance = 0.0142

Chi Square for Females = 22.82846 with 16 Degrees of Freedom.
Significance = 0.1184

Table 6:27

Reason Respondent Left Second Job
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Laid off	1.7	2.5	14.1	0.6	3.3	4.2
Desired to move	8.5	8.9	4.3	16.6	11.7	13.6
Dissatisfaction with type of work done	17.0	18.5	27.2	11.7	13.0	18.6
Salary dissatisfaction	5.7	5.7	14.1	1.2	2.1	3.4
General dissatisfaction	12.5	10.8	9.8	6.7	7.5	8.5
Transfer or promotion	15.3	16.6	6.5	3.1	2.9	5.1
Promotion with responsibility	21.0	18.5	8.7	3.7	4.6	3.4
Desired to travel	1.7	3.2	1.1	4.3	5.0	6.8
Family reasons	3.4	2.5	1.1	42.3	29.7	16.9
No desire to work at all	0.0	1.3	1.1	3.1	1.7	0.0
Further education	4.5	5.7	5.9	1.8	5.4	7.6
Other	8.5	5.7	6.5	4.9	13.0	11.9
Total N	176	157	92	163	239	118

Chi Square for Males = 50.82028 with 22 Degrees of Freedom.
Significance = 0.0005

Chi Square for Females = 42.48563 with 22 Degrees of Freedom.
Significance = 0.0055

Table 6:28

Reason Left Third Job By
Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Laid off	6.1	10.0	31.8	2.8	1.0	6.7
Desired to move	4.9	6.7	4.5	16.7	12.5	10.0
Dissatisfaction with type of work done	15.9	15.0	13.6	12.5	10.6	13.3
Salary dissatisfaction	6.1	1.7	4.5	2.8	1.0	3.3
General dissatisfaction	12.2	15.0	13.6	5.6	8.7	13.3
Transfer or promotion	17.1	15.0	13.6	4.2	4.8	6.7
Promotion with responsibility	23.2	16.7	4.5	12.5	2.9	3.3
Desired to travel	4.9	6.7	4.5	2.8	8.7	10.0
Family reasons	1.2	1.7	0.0	33.3	28.8	13.3
No desire to work at all	-	-	-	2.8	1.9	-
Further education	4.9	1.7	4.5	0.0	5.8	6.7
Other	3.7	10.0	4.5	4.2	13.5	13.3
Total N	82	60	22	72	104	30

Chi Square for Males = 20.26794 with 20 Degrees of Freedom.
Significance = 0.4413

Chi Square for Females = 28.81161 with 22 Degrees of
Freedom. Significance = 0.1503

Table 6:29

Satisfaction with Second Job
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Dissatisfied	2.7	2.4	6.5	3.6	5.0	5.4
	3.1	1.9	5.0	10.2	6.0	7.0
	4.1	4.3	12.6	5.6	9.4	8.7
	7.9	12.2	24.4	12.2	12.5	17.4
	23.7	22.9	18.3	22.4	20.7	23.1
	31.6	38.6	22.1	25.0	31.3	25.4
Ideal Job	26.8	17.8	11.1	20.9	15.0	13.0
Total N	291	376	262	196	319	299

Chi Square for Males = 94.96654 with 12 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 17.27312 with 12 Degrees of Freedom.
Significance = 0.1396

Table 6:30

Satisfaction With Third Job
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Dissatisfaction	0.6	4.7	9.7	4.6	5.5	6.9
	2.9	4.0	2.8	4.6	6.1	4.6
	4.0	2.7	9.7	8.3	11.0	4.6
	9.8	8.0	23.6	12.8	11.0	17.2
	20.8	19.3	15.3	25.7	29.4	13.8
	31.2	34.0	22.2	25.7	21.5	40.2
Ideal Job	30.6	27.3	16.7	18.3	15.3	12.6
Total N	173	150	72	109	163	87

Chi Square for Males = 35.35849 with 12 Degrees of Freedom.
Significance = 0.0004

Chi Square for Females = 19.53337 with 12 Degrees of Freedom.
Significance = 0.0764

3. Job Seeking and Finding

Attention is now given to changes in patterns relating to the number of jobs applied for by respondents, the number of job offers they received, their experiences with unemployment and their perceptions concerning the most effective method of seeking a job.

Turning first to Table 6:31, it may be seen that for both male and female 1968 graduates, there has been a pronounced tendency to apply for more jobs than their 1960 or 1964 counterparts. The relationship is more pronounced in the case of males than it is for females although in both cases the increase has been quite considerable. For example, 9.8 per cent of 1960 male graduates applied for nine or more jobs as compared with 24.7 per cent of male 1968 graduates; 5.4 per cent of female 1960 graduates applied for nine or more jobs as compared with 18.7 per cent of female graduates in 1968. The table is statistically significant for both males and females.

As may be seen from Table 6:32, however, this increase in the number of jobs applied for has not been met for either male or female graduates with commensurate increase in the number of jobs offered.

Turning next to Table 6:33, it may be seen that both male and female 1968 graduates are more likely to have had experience with unemployment than their 1960 or 1964

counterparts. For example, only 9.7 per cent of male 1960 graduates reported any experience with unemployment. This figure had risen to 21.0 per cent in 1968. For females, 12.9 per cent of 1960 graduates reported any experience with unemployment. In 1968, this percentage had risen to 24.1. Both tables for males and females are statistically significant.

Table 6:34 presents data on our respondents' assessments of the most effective job seeking method. For male graduates, 1968 graduates placed less emphasis on business contacts and more on personal contacts. Male 1968 graduates are twice as likely to make use of university placement services as their 1960 counterparts. The use of advertisements and contacting future employers on one's own have remained essentially consistent for 1960, 1964 and 1968 male graduates. For 1968 male graduates, the most important single method of seeking a job was contacting future employers on one's own, at 41.3 per cent. The second most important was the use of business contacts, at 16.2 per cent; the third most important was advertisements at 13.1 per cent. Personal contacts came next at 11.8 per cent and university placement services followed with 10.6 per cent. In similar fashion to the males, female graduates were less likely to make use of business contacts in seeking a job as one moves from 1960 to 1964 and were more likely to make use of personal contacts. Whereas the male use of advertisements had

remained consistent over the years, for females it had declined from 24.7 per cent in 1960 to 11.9 per cent in 1968. For female 1968 graduates, the most effective method of seeking a job was contacting future employers on one's own, followed by business contacts, followed by personal contacts, followed by advertisements. Female 1960 graduates used university placement services to the extent of 3.0 per cent. This had only increased to 4.7 per cent in the case of 1968 female graduates. Both tables for males and females are statistically significant.

Table 6:31

Number of Jobs Applied For
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
One	30.1	32.3	23.7	39.6	35.4	31.4
Two	17.2	16.7	10.2	17.1	19.6	13.0
Three	17.2	14.8	9.9	15.8	17.6	12.3
Four	12.3	11.6	9.2	7.1	6.8	8.2
Five	6.1	7.2	6.0	7.1	5.5	7.2
Six	4.0	6.1	7.4	5.0	3.0	4.3
Seven	1.2	1.1	4.2	0.8	1.3	1.9
Eight	2.1	0.4	4.7	2.1	1.3	3.0
Nine or more	9.8	9.7	24.7	5.4	9.5	18.7
Total N	326	526	596	240	398	625

Chi Square for Males = 118.76459 with 16 Degrees of Freedom.
Significance = 0.0

Chi Square for Females = 53.38464 with 16 Degrees of
Freedom. Significance = 0.0000

Table 6:32

Number of Job Offers Received
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
One	46.6	47.8	45.3	62.1	54.1	59.4
Two	29.6	25.7	31.2	19.0	27.3	26.7
Three	13.4	13.5	12.8	10.0	13.1	10.6
Four	6.2	8.0	5.2	4.3	1.9	2.4
Five	1.6	2.4	1.4	2.4	2.5	0.6
Six	0.7	1.2	2.0	1.9	0.5	0.2
Seven	0.3	0.2	0.5	0.0	0.0	0.2
Eight	0.0	0.4	0.5	0.5	0.0	0.0
Nine or more	1.6	0.8	0.9	0.0	0.5	0.0
Total N	307	502	554	211	366	540

Chi Square for Males = 14.45179 with 16 Degrees of Freedom.
Significance = 0.5651

Chi Square for Females = 33.76413 with 16 Degrees of Freedom.
Significance = 0.0058

Table 6:33

Unemployment Experiences
By Year of Graduation
(%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Never been unemployed	90.3	92.2	79.0	87.1	81.5	75.9
Have been unemployed	9.7	7.8	21.0	12.9	18.5	24.1
Total N	403	663	816	287	471	777

Chi Square for Males = 60.19383 with 2 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 17.54691 with 2 Degrees of Freedom.
Significance = 0.0002

Table 6:34

Most Effective Job Seeking Method
By Year of Graduation (%)

	Male			Female		
	1960	1964	1968	1960	1964	1968
Personal contacts	7.1	6.0	11.8	3.0	7.1	13.4
Business contacts	27.1	23.8	16.2	31.8	29.6	27.3
Government agency	0.6	0.9	1.6	0.4	0.9	0.9
Private agency	1.1	3.4	2.0	2.1	1.2	2.3
University placement services	5.1	5.2	10.6	3.0	3.3	4.7
Advertisements	14.7	16.9	13.1	24.7	13.2	11.9
Contacting future employer on own	39.3	40.6	41.3	34.0	42.7	38.4
Promotion with same employer	4.2	2.0	2.5	0.8	1.7	0.9
Other	0.8	1.2	0.9	0.4	1.2	0.8
Total N	354	562	687	236	423	662

Chi Square for Males = 60.84808 with 16 Degrees of Freedom.
Significance = 0.0000

Chi Square for Females = 55.85626 with 16 Degrees of Freedom.
Significance = 0.0000

D. Entry to the Labour Market After Graduation: Other
Controls Examined

We have now examined a number of aspects of the labour market experiences after graduation by our respondents within the sex and year of graduation framework of analysis. We return now to a further examination of the most single critical issue of this chapter, that is, the relationship between year of graduation and the prestige of the first full-time job a respondent obtained after graduation. Our concern, of course, is not so much with occupational prestige per se but rather with the fact that the prestige of first job obtained after graduation reflects a number of important considerations such as changes in the labour market value of a university undergraduate degree and directions of change in the value attached to such degrees in the labour market. Specifically, we will seek further sources of variation in terms of respondent's socio-economic background, whether an honours or general degree graduate, field of study, undergraduate university attended, and self-reported grade average in the senior year of study. The further analysis will first be conducted for male respondents. Females will then be considered and, in order to avoid redundancy, note will only be taken of the significant ways in which they depart from the findings reported for males.

Examining the prestige of the first full-time job obtained by male 1960, 1964 and 1968 graduates in terms of a number of

control variables, the following findings were observed:

- (1) A control for the respondent's socio-economic background in terms of father's education produced no effect. 1968 graduates from backgrounds characterized by both high and low levels of education were equally likely to have obtained lower prestige jobs after graduation as their 1960 or 1964 counterparts.
- (2) Using an alternative measure of socio-economic background, in this case father's occupation, the same finding obtained; that is, year of graduation had far more effect on the prestige of the full-time job obtained after graduation than did socio-economic background.
- (3) A control for undergraduate university attended produced the following effects. The proportion of Toronto graduates entering low prestige fields after graduation was smallest in 1964 at 14.1 per cent. In 1960, it had been 16.7 per cent. In 1968, however, 32.8 per cent of University of Toronto graduates entered occupational fields characterized as having lower prestige in terms of the Porter-Pineo scale. The proportion of Queen's graduates entering lower prestige fields has shown a steady increase from 1960 through 1968. In 1960, only 1.6 per cent of graduates entered a field characterized as lower in terms of the Porter-Pineo scale. By 1964, this had

risen to 10.2 per cent; in 1968, it was 28.4 per cent. The trend for McMaster graduates is curvilinear. In 1960, 15.3 per cent entered fields characterized as lower. In 1964, this had dropped to 8.6 per cent. In 1968, it had risen again to 19.5 per cent. Data are not available for 1960 Waterloo graduates; however, in 1964, 8.6 per cent of Waterloo graduates in the sample entered fields characterized as lower in terms of prestige. By 1968, this had risen to 17.6 per cent. Thus, in summary, these findings suggest overall that undergraduate university attended does not lead to any significant reversals or effects upon the observed relationship between year of graduation and prestige of first full-time job entered after graduation.

- (4) A control was made for whether the undergraduate degree received was honours or general, to see whether or not this had any effect upon prestige of field entered after graduation. In 1960, 4.7 per cent of male honours degree holders entered fields characterized as low in terms of the occupational prestige scale. In 1964, this had risen to 7.5 per cent; in 1968, it had reached 12.5 per cent. In 1960, 17.4 per cent of male general degree holders entered fields characterized as low. By 1964, this had dropped to 13.9 per cent and in 1968 had risen to 30.4 per cent. The implication of these findings is that while in

absolute terms, fewer honours degree holders are found in lower prestige fields, their rate of increase in such fields is higher than is the case for general degree holders.

- (5) A further control was made for the field of study as defined in terms of humanities, social sciences and natural sciences. In 1960, 12.6 per cent of male humanities graduates entered fields characterized as lower in occupational prestige. In 1964, this had risen marginally to 13.4 per cent and in 1968, it stood at 15.2 per cent. For social science graduates, in 1960, 19.8 per cent entered fields characterized as lower. In 1964, this had dropped to 12.6 per cent but in 1968 rose to 27.4 per cent. For natural science graduates, in 1960, 8.6 per cent entered fields characterized as lower. In 1964, this stood at 9.0 per cent and in 1968, had risen dramatically to 35.4 per cent. Thus the pattern has been most stable for humanities graduates, there being only a general and relatively slight increase in the proportion entering lower prestige fields from 1960 to 1968. For social science graduates, the suggestion is that 1964 market conditions were particularly propitious to their absorption in higher prestige fields. By 1968, however, this situation was altered. It is for the natural science graduates that the situation has shown the most dramatic worsening.

- (6) Finally, a control was made for the respondent's self-reported grade average in the senior year of his university undergraduate program. Self-reported grade averages have to be viewed with caution in that there is a tendency for respondents to upgrade somewhat their actual academic standing. However, with a large sample such as this, it is possible to place more trust in the data reported as long as excessively fine discriminations are not used. For the purposes of this control, we have discriminated the respondents into three grade groups: those who reported an A average, those who reported a B average, and those who reported a C or D average. 11.6 per cent of male 1960 graduates reporting an A average entered fields characterized as low in terms of the occupational prestige scale. In 1964, this had dropped slightly to 10.8 per cent and in 1968, had dropped slightly further to 9.4 per cent. The trend is quite different for male graduates reporting a B average. In 1960, 12.0 per cent of these entered fields characterized as low; in 1964, this had dropped to 8.6 per cent but by 1968, it had risen to 29.8 per cent. For male respondents reporting a C or D average, 25.4 per cent entered fields characterized as low in 1960, 25.2 per cent in 1964 and 20.5 per cent in 1968. The general trend suggests that for A graduates in all three years of

graduation considered, and for B graduates for the years 1960 and 1964, having an A or B average increased the probabilities of entering a field characterized by higher occupational prestige. The reversal occurs in 1968, however, as far as B graduates and C or D graduates are concerned where in fact we find a somewhat greater proportion of 1968 graduates having B averages enter low prestige fields as compared with those graduates having C or D averages. It should be noted, however, that the percentage differences involved are not so great as to suggest that this may be treated as a reliable trend.

The findings for females were much the same as those reported for males. A few variations to be noted are as follows. For female McMaster graduates, the relationship between year of graduation and prestige of field entered after graduation was not curvilinear as it was in the case of males. In 1960, 7.1 per cent of female McMaster graduates entered occupational fields characterized as lower. In 1964, this had risen to 8.6 per cent and in 1968, it had reached 14.8 per cent. A difference is also to be noted for female graduates from Queen's University. In 1960, 11.6 per cent entered fields characterized as lower. In 1964, this had risen to 18.1 per cent and in 1968, had dropped again to 12.4 per cent. With regard to self-reported grade average in senior year, the experience for females reporting an A average

was quite different from males reporting an A average. In 1960, 3.4 per cent of such females entered fields characterized as lower. In 1964, this had increased to 9.6 per cent and in 1968, had reached 19.4 per cent. For females reporting a B average in 1960, 14.5 per cent entered lower fields. In 1964, this stood at 13.8 per cent and in 1968 had increased to 20.3 per cent. Finally, for females reporting a C or D average in 1960, 12.2 per cent entered lower fields. In 1964, this had risen to 16.5 per cent and in 1968 it had reached 25.4 per cent.

Chapter VII

Conclusions

The principal conclusions of this study are now summarized in four areas: the labour market experiences of respondents; respondents' patterns of undergraduate education; respondents' attitudes toward education and jobs; and some of the various factors which interact to bring about changing relationships between education and the job market.

1. Patterns of Labour Market Involvement

- (1) The analysis of data pertaining to the labour market experiences after graduation of respondents reveals that sex and year of graduation are the most significant sources of variation in our analysis relative to different patterns of labour market involvement. The significance of the sex variable is congruent with many earlier findings which point to the different labour market opportunities and experiences of males and females. The differences found by year of graduation suggest that this latter variable serves as a proxy for a number of changes in the market value of the B.A. or B.Sc. undergraduate degree over the past eight years.
- (2) Our findings made clear that male 1968 graduates do not receive as high prestige jobs after graduation as their earlier counterparts. This trend also obtains for females but is less pronounced.
- (3) The largest single employer of male 1968 graduates

after graduation continued to be elementary or secondary school teaching, although this showed a decline from 1960 to 1964. A greater proportion of males graduating in 1968 were entering manufacturing industry as compared with their earlier counterparts. Clearly, employment in secondary or elementary school teaching has been a major means for taking up male undergraduate degree holders into the labour market. With the effects of the post-war baby boom now tapering off, there is decreasing demand in this sector of employment. Our data do not suggest that alternative fields with commensurate occupational prestige are opening up as rapidly as the teaching sector is closing off. Furthermore, during the decade of the 60s, the expansion of university facilities made it more feasible for male undergraduate degree holders to go on to pursue post-graduate work and become university teachers. This avenue, too, is also clearly closing off. Growing concern over unemployed or under-employed M.A.'s and Ph.D.'s does not suggest that other employment sectors are expanding rapidly enough to take up the excess supply generated by the non-absorption of such educated manpower in the university teaching sector.

- (4) The absence of a systematic study of the preferences and practices of Canadian employers renders informed

judgement difficult as to what alternative employment futures may obtain for the undergraduate degree holder.

- (5) In contrast with regard to type of employer in first job after graduation, the greatest proportion of females were found in elementary and secondary school teaching and their patterns of employment have remained much more constant over the years than their male counterparts. It must be remembered, however, that there are more sources of natural job attrition among females, that is, leaving the labour force to marry or bear children or to work part-time as secondary bread winners within family groups.
- (6) When we consider our respondents in aggregate terms, we find that when 1960 and 1964 graduates moved on to second or third full-time jobs after graduation, they tended to improve the prestige ranking of the occupation they held. However, the occupational prestige situation of 1968 graduates appears to remain constant or worsen as a result of moving on to second or third full-time jobs after graduation.
- (7) For 1960 and 1964 male and female graduates, elementary and secondary school teaching had a much higher retention rate where second and third full-time jobs after graduation are concerned. An examination of our data shows that 1968 graduates (and this is

more pronounced for males than it is for females) show a marked tendency to drop out of elementary and secondary school teaching where second and third full-time jobs are concerned. Males, in increasing numbers, are entering manufacturing industry, transportation and communication, trade, and finance. The pattern for females is much more dispersed, suggesting that they are finding work wherever work is available.

- (8) For both male and female 1968 graduates, contacting future employers on their own emerged as the most important means of obtaining their first job after graduation. The use of business contacts had declined for both male and female 1968 graduates as compared with their earlier counterparts. Although the use of university placement services has increased for both males and females over the years, in 1968 university placement services represented the fourth most important method of obtaining a job for females and the third most important method of obtaining a job after graduation for males. Of 1968 male graduates, 14.6 per cent obtained a job through university placement services as compared with 11.4 per cent of females. Clearly, findings such as these suggest that much could be done to develop the counselling and placement function within universities.
- (9) The degree of satisfaction our respondents felt with

their first job after graduation has shown a definite decline for males over time with a somewhat less pronounced decline for females. Our findings also indicate, however, that when 1968 female graduates are compared with their 1960 counterparts, the later graduates are increasingly more likely to be dissatisfied in a variety of aspects of their work. We suggest that as a greater proportion of females enter the labour force and as the social climate facilitates a greater proportion of females pursuing serious careers in the labour force, female awareness with regard to a number of job-related issues is increasingly and more closely approximating male attitudes in these areas.

- (10) Further evidence of a tightening labour market situation for university undergraduate degree holders is reflected in a growing proportion of 1968 male graduates, as compared with their earlier counterparts, who cite being laid off as the reason for leaving second and third jobs after graduation. The trend also holds for females but is less pronounced. Again, however, it must be recalled that more natural sources of attrition obtain in the female case, thus decreasing the necessity for formal lay-offs.
- (11) 1968 graduates, both male and female, are applying for more jobs than their 1960 or 1964 counterparts.

They are not, however, receiving more job offers.

- (12) For both male and female 1968 graduates, those who characterized their major field of study while an undergraduate as natural sciences were hardest hit in terms of diminished prestige of first job after graduation. For example, of male 1960 graduates in natural sciences, 8.6 per cent entered fields characterized as lower in occupational prestige. In 1964, this stood at 9.0 per cent and in 1968 had risen dramatically to 35.4 per cent.

2. Patterns of Undergraduate Education

- (1) In the light of the above observation that graduates citing natural sciences as their major field of study at university are being most affected in terms of diminishing occupational prestige in full-time jobs after graduation, it should be noted from the data we have gathered on our respondents' undergraduate educational experiences that whereas females have been relatively stable in their selection of major field of study over time, males have shown a dropping off from humanities and a rise in both natural sciences and social sciences. It seems likely that this changing pattern of male enrolment is a response to increased perception of the importance of science or science-oriented disciplines during the 1960s.

As our findings suggest, labour market forces, at the point in time 1968, did not appear to be exerting significant feedback effects vis-a-vis this impression.

- (2) Potential employment problems for natural science graduates must also be evaluated in terms of changing female patterns of enrolment. In both 1960 and 1968, approximately 71.0 per cent of female respondents graduated with general B.A. degrees. However, the B.A. honours degree has dropped from its 1960 value where it accounted for 27.4 per cent of female graduates to 20.5 per cent in 1968. Conversely, both the B.Sc. general degree and B.Sc. honours degree have claimed an increasing proportion of female graduates in 1968 as compared with 1960.
- (3) It must also be recalled that these proportionate increases over the years represent percentages of increasingly large enrolments. Therefore, the absolute number of individuals affected by the situation or for whom jobs must be found or created is larger.
- (4) With regard to patterns of financial support while an undergraduate, we find that the importance of financial support from parents or relatives is declining for both males and females over the period 1960 to 1968, whereas part-time and/or summer work has remained relatively constant for males during this time period and its importance has increased for females. The

importance of loans as a way of financing undergraduate education has increased for both males and females during the time period in question. These changing patterns of support should be viewed in conjunction with the finding reported in Chapter III where we discovered that over the time period in question, a greater proportion of later graduates came from lower socio-economic backgrounds than their earlier counterparts. University graduates from lower socio-economic backgrounds are still, however, under-represented.

3. Attitudes Toward Education and the Labour Market

- (1) As the findings in Chapter IV show, a considerable proportion of respondents continue to assume an employment-oriented attitude toward their undergraduate education, continue to value work satisfaction and job responsibility, and continue to display the intrinsic motivation often associated with these views.
- (2) However, the data show that the employment-oriented attitude toward education is becoming of less importance to male graduates over the time period in question. With regard to such issues as taking into account subsequent employment in planning an undergraduate program of study and the overall

importance of work considerations to life happiness, females have been relatively constant in attaching less value to these factors than males.

- (3) In one attitudinal area, however, a change on the part of females is to be noted and this is with regard to the amount of responsibility females perceive themselves as having on their first job after graduation. Over time, female graduates are increasingly likely to perceive themselves as having more responsibility.
- (4) It may be inferred from these findings that, traditionally, females have never attached as much importance as males to the employment applications of university education. Therefore, as the employment usefulness of a general arts and science undergraduate degree has declined over time, male attitudes have had a greater shift to make than have female attitudes. This is reflected in our data.
- (5) With regard to extrinsic occupational values, that is, valuing an occupation for prestige, security or the monetary rewards it brings, we find that this pattern of occupational value is most likely to be held by either the male or female respondents in our sample who come from lower socio-economic backgrounds. An important combination of factors to be observed in this connection is that the recruitment to university

of persons from lower socio-economic backgrounds has increased over recent years, that these are the individuals who are most likely to value the extrinsic employment pay-off of university undergraduate education, and that just at the point in time when the social base of recruitment to university has started to broaden, the employment avenues for realizing such extrinsic values with an undergraduate degree have become substantially diminished.

- (6) It should also be noted that the natural science graduates in our sample attach the most importance to subsequent employment possibilities in planning their undergraduate career. As we have already pointed out, natural science graduates have been most affected of any group in the significant drop in prestige of first full-time job available after graduation.

4. The Interaction of Market Factors

- (1) The present findings inform us about the changing labour market experiences of undergraduate arts and science degree holders and permit us to make some inferences about the changing labour market value of such degrees. The general direction of change is toward such degrees having less labour market value than they have in the past. The general trend

we would continue to predict for the future is a continuing diminishment of the labour market value of the degree. However, new variables have now entered the situation which further complicate the matter. For example, community college graduates are now graduating in greater numbers and may well begin to compete effectively with university graduates in a number of employment sectors. Yet we are unable to assess this in a reliable fashion as there is a lack of data on the practices and preferences of Canadian employers with regard to university undergraduate degree holders and graduates from community colleges. We know little, in effect, about what degrees of substitution may obtain.

- (2) Another factor complicating the situation is that if the labour market situation has worsened for university undergraduate degree holders in Ontario, a prosperous province, what must be the problem in other less economically developed provinces? It is well known that educated manpower is most likely to migrate in search of appropriate employment when suitable opportunities are not to be found "at home." The migration patterns of such educated manpower are another factor we know little about and one that can influence the future link between university undergraduate degree holders and the labour market in Ontario.

- (3) Several kinds of on-going work are required to provide the data central to rational educational planning in this area:
- (a) A program of continued monitoring should be developed in order to continue to assess the employment experiences of university graduates;
 - (b) It is desirable that mechanisms be developed whereby more accurate information about changing labour market demands may be conveyed more rapidly to students seeking such information. In this connection, development of a more sophisticated range of services through university placement and counselling services is indicated;
 - (c) More detailed studies need to be made of particular aspects of the labour market, particularly with reference to those areas where university graduates and community college graduates may start to compete for the same positions; and
 - (d) A study of the preferences and practices of Canadian employers would give us more indication of what to expect in such areas as the possible substitution of community college graduates for university graduates or the kinds

of curriculum change employers might consider useful or helpful to their goals, and also to discover what avenues might be opened up to provide alternative forms of employment in different sectors of the labour market for the university undergraduate degree holder.

- (4) The carrying out of national studies of the linkage between educational systems and the labour market will provide data to assess the significance of such factors as the migration from province to province of educated manpower and the effects that this has upon specific sub-sectors of the labour market.

5. Final Comments

The major thrust of this report is concerned with the tightening labour market for the B.A. and B.Sc. graduates. This is not meant to imply, however, that the only legitimate way of viewing university general education is from the perspective of its labour market value. Clearly, there are many arguments to be made for other important functions subserved by such education. An earlier report by Harvey and Lennards,¹ for example, points to a number of non-vocational outcomes of higher education such as increased tolerance and a greater awareness and willingness to perform a role as an informed citizen. However, the types of occupations university graduates enter remain an important

consideration. For example, if university undergraduates are operating with a set of expectations that lead them to believe that a university degree ensures a relatively high level of employment, then we must give attention to ways and means by which such expectations may become more congruent with the realities of the situation. As may be seen in Chapter IV which deals with values and attitudes toward work, there is some evidence, particularly among males, that later graduates are coming to place less importance upon work activities as a central life interest or as a factor in planning their undergraduate educational experience. But this is only a trend. As may be seen from the tables in Chapter V, a great many undergraduate degree holders still attach substantial importance to work in life. Furthermore, the overall value climate of our society has not so adjusted that it is easy for the individual to hold attitudes or values that minimize rather than maximize the importance of work and effort. Another consideration relates to the argument often used to justify a public subsidy to higher education, that is, that university graduates in general go on to obtain well-paying jobs and, through the subsequent payment of taxes, offer a more than adequate return on the public subsidy which assisted them to obtain their educations. Clearly, our findings and indicated future trends raise some questions about the extent to which this position may be tenable in the future. This is not to argue against

the non-economic social benefits of higher education. It is, however, to suggest that the latter are difficult to measure and that, in many respects, the present structure of our society makes it more difficult to place emphasis upon such factors rather than economic factors. Clearly, the non-work importance of higher education will have to become increasingly recognized in society and will have to become a legitimate value in terms of overall social climate. The process of value change and legitimation is a long one, however, and we cannot reasonably anticipate quick adjustments in this area.

Our concluding remarks reflect the fact that we have attempted to conduct a trend analysis in this report. As we pointed out in our earlier discussion of historical cohort analysis (p. 58), this is a technique that simulates a trend rather than actually recording it over a long period of time. However, when the appropriate statistical controls are made in the data analysis, as we believe they have been here, it is possible to form a more accurate impression of how the educational system-labour market situation has changed over time. Of considerable importance, of course, is the fact that the data now in hand will serve to provide a base line against which future changes in the educational system-labour market situation may be monitored. It was the absence of any such base line that required us to undertake the historical cohort analysis used in this study.

Footnotes

- ¹ E.B. Harvey and J.L. Lennards, The Changing Nature of Post-Secondary Education: Attitudes, Costs and Benefits, a research study prepared for the Commission on Post-Secondary Education in Ontario, 1971.

Appendix 1

The Questionnaire

1. Please think back to the time when you decided on the major field of study in which you eventually graduated. To what extent were you influenced by considerations about the kind of work you wanted to do after graduation? On a scale of 1 to 7, where 1 represents hardly influenced at all and 7 represents greatly influenced, please circle the number which corresponds most closely to your state of mind at the time.

1 2 3 4 5 6 7

2. On a scale of 1 to 7, where 1 represents not a prerequisite at all and 7 represents an absolute prerequisite, please indicate by circling the appropriate number, how important your undergraduate education is as a prerequisite for the job you now hold.

1 2 3 4 5 6 7

3. On a scale of 1 to 7, where 1 represents useless and 7 represents extremely useful, please indicate by circling the appropriate number, how useful your undergraduate education is for the actual performance of the job you have now.

1 2 3 4 5 6 7

4. On a scale of 1 to 7, where 1 represents definitely could not be and 7 represents definitely could be, please indicate by circling the appropriate number, to what extent you believe the job you presently hold could be done as well or better by someone with an educational background different from yours.

1 2 3 4 5 6 7

5. On a scale from 1 to 7, where 1 represents very little responsibility and 7 represents a great deal of responsibility, please indicate by circling the appropriate number, the amount of responsibility you had in your first job after receiving your undergraduate degree.

1 2 3 4 5 6 7

6. On a scale from 1 to 7, where 1 represents not important at all and 7 represents more important than anything else, please assess by circling the appropriate number, the importance of satisfaction derived from your work to your over-all life happiness.

1 2 3 4 5 6 7

7. Here is a list of occupational characteristics. Please select, in order of importance, three which would be most important to you for your ideal career. (Please enter the appropriate numbers below.)
- (1) A job that provides a very good salary and one in which you work regular hours and have regular holidays.
 - (2) A career that is considered a worthy one and which has high prestige and standing in the community.
 - (3) A career that provides security of employment in that work is always available.
 - (4) A career that is very useful and important to society in general and in which you directly benefit your fellow man.
 - (5) A job in which you can meet the public and deal directly with people.
 - (6) A career where you will have associates or colleagues who have the same general interests and whose company you find extremely stimulating.
 - (7) An occupation in which you can use all your knowledge, training aptitudes and skills and one which allows you to develop and excel in these areas.
 - (8) A career that requires a good knowledge of a specialized body of knowledge.
 - (9) A job where you are pretty well "your own boss", in that you are not always under guidance and supervision of someone else.

_____ Most important _____ Second most important _____ Third most important

8. If you feel that your present job does not utilize the knowledge gained in your major field of study, could you briefly describe why you believe this is so?

EDUCATIONAL HISTORY

9. Did you take any other post-secondary education before entering university?

_____ Yes (please fill in the table below)

_____ No (please go to question #10)

<u>Name of Institution</u>	<u>Course or Programme</u>	<u>Dates</u>		<u>Result (Pass/Fail)</u>
		<u>From</u>	<u>To</u>	

NOTE: If you received more than one undergraduate degree, please answer all of the following questions with reference to the first degree you received.

10. What was the name of the university from which you earned your undergraduate degree?

- ☐ (1) University of Toronto
☐ (2) Queen's University
☐ (3) McMaster University
☐ (4) University of Waterloo
☐ (5) Other (please specify) _____

11. In what year did you receive your undergraduate degree?

- ☐ (1) 1960
☐ (2) 1964
☐ (3) 1968
☐ (4) Other (please specify) _____

12. What undergraduate degree did you receive?

- ☐ (1) B.A. (general)
☐ (2) B.A. (honours)
☐ (3) B.Sc. (general)
☐ (4) B.Sc. (honours)
☐ (5) Other (please specify) _____

13. What was your major field of study in your senior year?

- ☐ (1) Humanities
☐ (2) Social Sciences
☐ (3) Natural or Biological Sciences
☐ (4) Other (please specify) _____

14. What was your major subject of study in your senior year? Use the appropriate list below. If more than one, please check off both.

HUMANITIES	SOCIAL SCIENCES	NATURAL AND BIOLOGICAL SCIENCES
<input type="checkbox"/> (01) Classics <input type="checkbox"/> (02) English <input type="checkbox"/> (03) French <input type="checkbox"/> (04) Other language(s) <input type="checkbox"/> (05) Fine Art, Theatre or Music <input type="checkbox"/> (06) History <input type="checkbox"/> (07) Philosophy <input type="checkbox"/> (08) Religious Studies <input type="checkbox"/> (09) Mathematics <input type="checkbox"/> (10) Other (please specify) _____	<input type="checkbox"/> (11) Anthropology <input type="checkbox"/> (12) Psychology <input type="checkbox"/> (13) Sociology <input type="checkbox"/> (14) Geography <input type="checkbox"/> (15) Political Science <input type="checkbox"/> (16) Economics <input type="checkbox"/> (17) Other (please specify) _____	<input type="checkbox"/> (18) Mathematics <input type="checkbox"/> (19) Physics <input type="checkbox"/> (20) Chemistry <input type="checkbox"/> (21) Astronomy <input type="checkbox"/> (22) Zoology <input type="checkbox"/> (23) Botany <input type="checkbox"/> (24) Other (please specify) _____

15. As an undergraduate, were you considered by your college to be a full-time or part-time student (including extension)?
- ___ (1) I took all my undergraduate work as a full-time student
- ___ (2) I took all my undergraduate work as a part-time or extension student
- ___ (3) Half or more than half my courses taken as a full-time student
- ___ (4) Less than half of my courses taken while a full-time student
- (If (2), (3), or (4), please go to question #20)
16. How many years did you spend in full-time attendance at university before receiving your undergraduate degree? (For full-time students only)
- _____
17. Did you change universities, faculties (e.g., Faculty of Arts & Science, Faculty of Applied Science & Engineering), course or program (e.g., General Science, Honor History), or major field of study while an undergraduate? (For full-time students only.)
- ___ (1) Changed none of these (please go on to question #19)
- ___ (2) Changed universities
- ___ (3) Changed faculties
- ___ (4) Changed course or programme
- ___ (5) Changed major field of study
18. Please complete the table below: university, faculty, program or course, or major field of study changed. (For full-time students only)

FROM	TO	AFTER (1st yr., 2nd year, etc.)	Reason for Change (Use Code A below)
(a) _____	_____	_____	_____
(b) _____	_____	_____	_____
(c) _____	_____	_____	_____
(d) _____	_____	_____	_____
(e) _____	_____	_____	_____

CODE A

___ (1) Grades too low

___ (2) Grades high enough to permit transfer

___ (3) Dissatisfaction with present university, faculty, programme, field of study, etc. -- preference for another

___ (4) Requirements completed for transfer to another university, faculty, programme, field of study, etc.

___ (5) Other (please specify) _____

19. How many years did you reside with your parents or relatives (other than your spouse) during the academic year while you were an undergraduate? (For full-time students only)
- _____

20. What was your major pattern of financial support during your undergraduate training? Please list the three most important to you in order of their importance. Place appropriate numbers of forms of support in order of importance in the blanks below.

- | | |
|---|---|
| (1) Parents or relatives (excluding spouse) | (5) Scholarships, bursaries, grants, etc. |
| (2) Spouse | (6) Loans |
| (3) Part-time and/or summer work | (7) Own savings |
| (4) Full-time employment while studying | (8) Other (please specify) |

First Most Important
 Second Most Important
 Third Most Important

21. Approximately how much, if any, were you in debt when you received your undergraduate degree?

\$

22. Please indicate, as accurately as you are able to recall, the academic average you obtained during your senior year as an undergraduate (e.g., 61%, B-, C, etc.). If your degree was partially or fully obtained as a part-time or extension student, indicate the average of grades for your last five courses.

23. When you received your undergraduate degree, to what extent had you definitely decided on a specific occupation? On a scale of 1 to 7, where 1 represents very undecided and 7 represents very decided, please circle the number which corresponds most closely to your state of mind at the time.

1 2 3 4 5 6 7

24. Since obtaining your undergraduate degree, have you at any time undertaken any program of postgraduate education, including university, Ontario College of Education, etc.? Please include any work taken towards a second undergraduate degree.

(1) Yes
 (2) No (If no, please go to question #29)

25. Please fill in the table below regarding your post-graduate education. In the column headed "Status", please circle *FT* if you took most or all of your courses as a full-time student. Please circle *PT* if you took most or all of your courses as a part-time or summer student.

Institution	Programme	Status	When Attended (Dates)	Degree, Diploma, or Certificate Received (if any)
a) <input type="text"/>	<input type="text"/>	FT PT	<input type="text"/>	<input type="text"/>
b) <input type="text"/>	<input type="text"/>	FT PT	<input type="text"/>	<input type="text"/>
c) <input type="text"/>	<input type="text"/>	FT PT	<input type="text"/>	<input type="text"/>
d) <input type="text"/>	<input type="text"/>	FT PT	<input type="text"/>	<input type="text"/>

26. For each of the institutions or programs you have listed in question #25, please indicate the most important factor in your decision to enter using the code below.

- a) _____
 b) _____
 c) _____
 d) _____

- | | |
|--------------------------------------|-------------------------------------|
| (1) Fellowship | (5) Good staff |
| (2) No suitable employment available | (6) Good course content and variety |
| (3) Ambition for university teaching | (7) Other (please specify) |
| (4) Good facilities | |

27. For each of the institutions or programs you have listed in question #25 (except for the one in which you might presently be enrolled), please indicate your most important reason for leaving using the code below.

- a) _____
 b) _____
 c) _____
 d) _____

- | | |
|-----------------------------------|--------------------------------------|
| (1) Course completed | (6) Family reasons |
| (2) Financial difficulties | (7) Disillusioned with program, etc. |
| (3) Suitable employment available | (8) Desired to travel |
| (4) Failed | (9) Other (please specify) |
| (5) Personal reasons | |

28. What was your major pattern of financial support during your graduate training? (Please list the three most important to you in order of their importance, placing the appropriate numbers of forms of support in order of importance in the blanks below.)

- | | |
|---|---|
| (01) Parents or relatives (excluding spouse) | (06) Ontario graduate fellowship |
| (02) Spouse | (07) Other fellowships, grants, bursaries, awards, etc. |
| (03) Research or teaching assistantship | (08) Loans |
| (04) Other part-time and/or summer employment | (09) Full-time employment |
| (05) Own savings | (10) Other (please specify) |

- ___ First Most Important
 ___ Second Most Important
 ___ Third Most Important

NOTE: If you took any of your undergraduate education as a part-time or extension student, go on to question 29(a).

If you took all of your undergraduate education as a full-time student but held a full-time job for longer than 4 months at any time either before attending university or during an interruption in your undergraduate education, go to question 29(b).

If you took all of your undergraduate education as a full-time student but did not hold a full-time job for longer than 4 months at any time either before attending university or during an interruption in your undergraduate education, go to question #30.

EMPLOYMENT HISTORY

RE: Questions 29(a), 29(b), and 30 about jobs and types of employers: Please be as specific as possible. For example, for jobs - TV repairman, public elementary school teacher, brokerage customers' man, etc. For types of employers - bank, high school, municipal government, self-employed, mining company, etc.

29. (a) Please list, in the order in which you held them, all the full-time jobs held while obtaining your degree as a part-time or extension student. (For those people who took some or all of their undergraduate education as a *part-time* or *extension* student.)

	<u>Job</u>	<u>Type of Employer</u>	<u>Dates</u>		<u>Gross Starting Salary Per Annum</u>
			<u>From</u>	<u>To</u>	
a)					
b)					
c)					
d)					
e)					

(b) Please list in the order in which you held them, all the full-time jobs held for longer than four months either before attending university or during an interruption in your undergraduate education. (For those people who took their degree as a *full-time* student but who were *employed* full-time at some point prior to graduation.)

	<u>Job</u>	<u>Type of Employer</u>	<u>Dates</u>		<u>Gross Starting Salary Per Annum</u>
			<u>From</u>	<u>To</u>	
a)					
b)					
c)					
d)					
e)					

30. Please list, in the order in which you held them, all the full-time jobs you have held since completing your bachelor's degree. Also, please indicate length of time held, gross starting salary per annum, how obtained, and reason for change according to the two codes following the table.

<u>Job</u>	<u>Type of Employer</u>	<u>Dates</u>		<u>Gross Start- ing Salary Per Annum</u>	<u>How Obtained (Use Code A Below)</u>	<u>Reasons for Leaving (Use Code B Below)</u>
		<u>From</u>	<u>To</u>			
a) _____						
b) _____						
c) _____						
d) _____						
e) _____						
f) _____						
g) _____						
h) _____						
i) _____						
j) _____						

CODE A: How Job Obtained (Indicate one only in the above table)

- (01) Initial contact was through family friends, or relatives
- (02) Initial contact was through other colleagues or contacts in your field
- (03) Government employment agency
- (04) Private employment agency
- (05) Campus placement service or on-campus recruiting
- (06) Newspaper or other advertisement
- (07) Approaching possible employers on your own
- (08) Promotion with same employer
- (09) Other (please specify) _____

CODE B: Reason for Change (Indicate one or more than one in order of importance)

- (01) Fired, laid off, asked directly or indirectly to resign
- (02) Desired to leave one community or to move to another
- (03) Dissatisfied with type of work or opportunity to get into a type of work which appealed to you more
- (04) Dissatisfied with salary or received an opportunity to earn more
- (05) Dissatisfied not with type of work performed but with general situation and conditions of that particular job
- (06) Transfer or promotion with same employer
- (07) Promotion with more responsibility in the same line of work
- (08) Desire to travel
- (09) Family reasons
- (10) No desire to work in any job
- (11) Other (please specify) _____

31. Considering your overall experience in seeking employment, which of the methods listed in Code A, question #30, do you consider to be the most effective?
- _____

32. On a scale of 1 to 7, where 1 represents not a job I wanted at all and 7 represents my ideal job (at that time), evaluate in the order in which you held them, each you have held since obtaining your bachelor's degree (i.e. those jobs listed in question #31).

___ First job	___ Sixth job
___ Second job	___ Seventh job
___ Third job	___ Eighth job
___ Fourth job	___ Ninth job
___ Fifth job	___ Tenth job

33. Please list below, the approximate dates, if any, of any periods of unemployment you have experienced while you were looking for work since graduation.

<u>From</u>	<u>To</u>

___ Never unemployed

34. Referring to the first job you held after receiving your undergraduate degree, at what point did you make the decision to enter this line of work?

___ (1) Before entering university
 ___ (2) During your first year of university
 ___ (3) During your second year
 ___ (4) During your third year
 ___ (5) During your fourth year
 ___ (6) After graduation
 ___ (7) Other (please specify) _____

35. How many jobs did you formally apply for after receiving your undergraduate degree and before accepting your first job?

36. Of this number of jobs applied for, how many offers did you receive?

37. What is your present gross salary per annum before taxes? (Do not include income from supplementary part-time jobs, on investments, savings or inheritances, etc.)

\$ _____

BACKGROUND INFORMATION

38. In what year were you born?

39. What is your sex?

____ (1) Male

____ (2) Female

40. What is your religious preference?

____ (1) Protestant

____ (2) Catholic

____ (3) Jewish

____ (4) Other (please specify) _____

41. How would you describe the size of the place where you lived for the greatest length of time while you were growing up?

____ (1) Population under 1,000

____ (2) Population of 1,000 to 10,000

____ (3) Population of 10,000 to 50,000

____ (4) Population of 50,000 to 250,000

____ (5) Population over 250,000

42. What is your marital status?

____ (1) Single

____ (2) Married

____ (3) Separated, widowed, or divorced

43. What is your spouse's present occupation?

44. In what year were you married?

45. How many children do you have?

46. In what year was your first child born?

47. How many years of education did your father complete?

48. How many years of education did your mother complete?

49. What was your father's main occupation while you were growing up?

- ☐ (01) Clerical or sales (specific job?)
- ☐ (02) Farm employee
- ☐ (03) Farm owner
- ☐ (04) Professional (which profession?)
- ☐ (05) Semi-professional (specific job?)
- ☐ (06) Proprietor, manager or official of
a large enterprise (specific job?)
- ☐ (07) Proprietor, manager or official of
a small enterprise (specific job?)
- ☐ (08) Skilled craftsman (specific job?)
- ☐ (09) Unskilled craftsman (specific job?)
- ☐ (10) Other (please specify)

50. On a scale from 1 to 7 where 1 represents not well off at all and 7 represents very well off, how would you describe your family's economic situation while you were growing up?

1 2 3 4 5 6 7

51. What is the status of your citizenship?

- ☐ (1) Canadian by birth
- ☐ (2) Naturalized Canadian
- ☐ (3) Landed immigrant
- ☐ (4) Other (please specify) _____

52. What, approximately, is the population of the place where you currently live?

- ☐ (1) Under 1,000
- ☐ (2) 1,000 to 10,000
- ☐ (3) 10,000 to 50,000
- ☐ (4) 50,000 to 250,000
- ☐ (5) Over 250,000

Appendix 2

Contact and Follow-up Letters

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION

252 BLOOR STREET WEST, TORONTO 5, ONTARIO, CANADA

TELEPHONE 923-6641

DEPARTMENT OF SOCIOLOGY IN EDUCATION

Dear Graduate,

The questionnaire enclosed with this letter has been sent to over 6,000 individuals who have graduated from Ontario universities over the past decade. It asks detailed questions dealing with educational and occupational experiences, attitudes toward education, and some general background information. The research is under the sponsorship of the Commission on Post-Secondary Education in Ontario.

This research has been undertaken in response to a growing problem of national concern - how do our university graduates fare in the labour market?

Over the past ten years, educational and employment opportunities in the Province of Ontario have been changing. If we are to be successful in planning Ontario's future educational needs, we must keep abreast of what is happening to our university graduates. We must be aware of their reactions to their educational and occupational experiences. We must learn their opinions without delay.

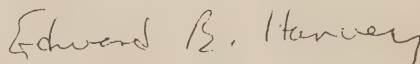
If we are to understand the kinds of change that have taken place in our Province over the past ten years, and plan for the future, it is imperative that we have the highest rate of response possible. We feel the data gathered in this research will be invaluable to such understanding and planning.

The data gathered will be used only in statistical analyses and no individual will be identified. All responses will be held in strictest confidence.

We ask you to take the time to complete the questionnaire and return it in the addressed, stamped envelope provided.

We thank you for your help.

Yours sincerely,



Edward B. Harvey, Ph.D.
Associate Professor

EBH/lb
Enc.

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION

252 BLOOR STREET WEST, TORONTO 5, ONTARIO, CANADA

TELEPHONE 923-6641

Dear Graduate,

A short time ago, we sent you the enclosed questionnaire and letter. We felt that the research referred to is of great importance and well worth the relatively short time required to complete the questionnaire.

We would be very grateful indeed if you could take the time to complete the questionnaire and return it to us at the earliest possible date.

Yours sincerely,

Edward B. Harvey

EBH/lb
Enc.

Edward B. Harvey, Ph.D.
Associate Professor

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION

252 BLOOR STREET WEST, TORONTO 5, ONTARIO, CANADA

TELEPHONE 923-6641

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DEPARTMENT OF SOCIOLOGY IN EDUCATION

Dear Graduate,

Four weeks ago, we sent you a letter and questionnaire requesting your participation in a research project designed to gather information on the changing character of educational and employment opportunities in the Province of Ontario over the past ten years.

As we mentioned at that time, this research is of great importance in planning the future educational needs of the Province. The research will only be successful, however, if we obtain the highest response rate possible. The questionnaire should take less than one-half hour to fill out.

Could we please have your response?

If, for some reason, you do not wish to participate in this project, we would be grateful if you could let us know why. If you have any questions about the project, please contact

Dr. E.B. Harvey
Department of Sociology in Education
The Ontario Institute for Studies
in Education
252 Bloor Street West
Toronto, Ontario

or telephone at

923-6641, extension 281

Yours sincerely,

EBH/lb
Enc.

Edward B. Harvey, Ph.D.
Associate Professor

THE ONTARIO INSTITUTE FOR STUDIES IN EDUCATION

252 BLOOR STREET WEST, TORONTO 5, ONTARIO, CANADA

TELEPHONE 923-6641

DEPARTMENT OF SOCIOLOGY IN EDUCATION

Dear Graduate,

Approximately two weeks ago, we sent you the enclosed questionnaire and letter. We felt that the research referred to is of great importance and well worth the relatively short time required to complete the questionnaire.

We would be very grateful indeed if you could take the time to complete the questionnaire and return it to us at the earliest possible date.

Yours sincerely,



EBH/lb
Enc.

Edward B. Harvey, Ph.D.
Associate Professor

Appendix 3

Non-Respondent Questionnaire

EDUCATIONAL SYSTEMS/LABOUR MARKET STUDY

Non-Respondent Questionnaire

April, 1971

1. Name: _____
Address: _____
2. Undergraduate degree held:
____ (1) B.A. General
____ (2) B.A. Honours
____ (3) B.Sc. General
____ (4) B.Sc. Honours
____ (5) Other (please specify) _____
3. What was your major field of study in your senior year?
____ (1) Humanities
____ (2) Social Sciences
____ (3) Natural or Biological Sciences
____ (4) Other (please specify) _____
4. What is your present job?

5. Age at last birthday.

6. Sex
____ Male
____ Female
7. Summing up, how useful did you find your undergraduate education for the kind of job you now hold?

Appendix 4

Some Basic Characteristics of Respondents

Table 3:1

Age Distribution of Respondents

	Percentage
0-24 years	8.8
25-28 years	40.4
29-32 years	28.7
33-36 years	15.0
36+ years	6.5
Total N	4019

Table 3:2

Sex

	Percentage
Male	56.2
Female	43.8
Total N	4017

Table 3:3

Citizenship

	Percentage
Canadian born	83.8
Naturalized Canadian	11.3
Landed Immigrant	2.6
Other	2.3
Total N	4005

Table 3:4

Respondent's Socio-Economic Background
By Father's Education

	Percentage
0-8 years of schooling	22.9
9-12 years of schooling	32.9
13-16 years of schooling	24.1
16+ years of schooling	20.1
Total N	3877

Table 3:5

Respondent's Socio-Economic Background
by Father's Occupation

As Rated From Low to High on Porter- Pineo Occupational Prestige Scale	Percentage
1-19	20.7
20-29	14.3
30-39	10.9
40-49	4.9
50-59	5.1
60-69	9.9
70-79	10.3
80-99	24.0
Total N	3937

Table 3:6

Respondent's Socio-Economic Background
By Mother's Education

	Percentage
0-8 years of schooling	19.1
9-12 years of schooling	43.3
13-16 years of schooling	31.0
16+ years of schooling	6.6
Total N	3878

Table 3:7

Family's Economic Situation

	Percentage
Not good at all	3.6
	9.2
	18.8
	32.1
	25.7
	8.5
Very well off	2.2
Total N	4041

Table 3:8

Marital Status

	Percentage
Single	30.9
Married	67.2
Other	1.9
Total N	3096

Table 3:9

Number of Children

	Percentage
No children	59.7
1-2 children	30.5
3-4 children	8.8
5+ children	0.8
Total N	4042

Table 3:10

Socio-Economic Status of
Spouse's Occupation

As Rated From Low to High on Porter- Pineo Occupational Prestige Scale	Percentage
1-19	0.9
20-29	1.0
30-39	3.9
40-49	9.3
50-59	23.5
60-69	38.5
70-79	9.5
80-99	13.4
Total N	1638

Table 3:11

Size of Home Town

	Percentage
Less than 1,000	8.8
1,000-10,000	13.3
10,000-50,000	15.6
50,000-250,000	14.3
Greater than 250,000	47.9
Total N	4041

Table 3:12

Population of Present Home Town

	Percentage
Less than 1,000	2.8
1,000-10,000	7.3
10,000-50,000	11.6
50,000-250,000	23.0
Greater than 250,000	55.2
Total N	3096

Table 3:13

Religion

	Percentage
Protestant	56.9
Catholic	16.0
Jew	7.4
Other	19.7
Total N	4040

Appendix 5

Selected Aspects of Respondents'

Labour Force Experiences

Table 6:1

Type of Employer of First Job Held by Respondent While
Obtaining Degree as Part-time or Extension Student

	Percentage
Federal government	2.1
Provincial government	2.1
Municipal government	1.6
Elementary or secondary school	71.4
University	1.8
Manufacturing industry	7.8
Transportation and communication	1.8
Trade	2.9
Finance	2.9
Service	5.7
Total N	384

Table 6:2

First Full-time Job Held by Respondent Before Attending
University or During an Interruption of Undergraduate
University Career

	Percentage
Federal government	7.2
Provincial government	2.4
Municipal government	3.2
Elementary or secondary school	14.9
University	3.5
Other educational institution	0.5
Manufacturing industry	21.3
Transportation and communication	7.7
Trade	10.7
Finance	10.9
Service	17.6
Total N	375

Table 6:3

Point at Which Respondent Decided To
Enter First Job Field

	Percentage
Before entering university	25.3
First year of university	3.2
Second year of university	7.3
Third year of university	17.3
Fourth year of university	11.7
After graduation	26.5
Other	8.9
Total N	4040

Table 6:4

Prestige Distribution of Respondents'

Full-Time Jobs After Graduation

As Rated From Low to High on Porter-Pineo Occupational Prestige Scale	First Job	Second Job	Third Job
1-19	0.5	0.6	1.6
20-29	0.9	1.4	1.4
30-39	3.8	3.1	2.9
40-49	6.8	7.3	6.9
50-59	29.2	28.5	29.8
60-69	47.8	47.9	45.2
70-79	6.0	6.3	7.5
80-99	4.9	4.8	5.7
Total N	3586	1843	794

Table 6:5

Types of Employers Respondent Had
For First Three Jobs

	Percentage		
	First Job	Second Job	Third Job
Federal government	4.5	4.7	3.8
Provincial government	3.6	4.5	4.6
Municipal government	2.1	3.4	4.5
Elementary or secondary school	48.3	40.8	34.7
University	6.9	8.3	9.2
Other educational institution	0.7	1.4	0.9
Manufacturing industry	6.3	6.7	8.1
Transportation and communication	2.4	3.4	4.2
Trade	4.5	5.3	6.2
Finance	5.4	5.2	4.6
Service	15.3	16.2	19.3
Total N	3566	1812	763

Table 6:6

Reason Respondent Left First Three Jobs

	Percentage		
	First Job	Second Job	Third Job
Fired, laid off, asked directly or indirectly to resign	2.6	3.6	5.8
Desired to move	12.5	10.8	10.1
Dissatisfaction with work, had opportunity to get into more appealing type of work	16.8	15.7	12.3
Dissatisfied with salary; opportunity to earn more	6.3	4.5	2.8
General dissatisfaction with conditions of job	12.1	9.5	10.1
Transfer or promotion with same employer	6.8	8.3	10.1
Promotion with more responsibility in same line	6.9	10.2	12.6
Desire to travel	5.3	3.9	6.0
Family reasons	14.5	18.2	16.4
No desire to work at all	0.5	1.4	1.0
Further education	5.5	4.8	3.5
Other	10.2	9.0	9.3
Total N	2235	999	397

Table 6:7

Respondent's Satisfaction With First Three Jobs Held

	Percentage		
	First Job	Second Job	Third Job
Not satisfied at all	5.2	4.2	4.6
↓	4.7	5.3	4.2
	9.0	7.3	6.2
	14.9	14.1	12.0
	25.7	21.9	22.0
	20.1	29.6	29.5
Very satisfied	20.3	17.7	21.5
Total N	3462	1828	801

Table 6:8

Number of Jobs Respondent Applied For

	Percentage
1-2	46.8
3-4	22.9
5-6	11.4
7-8	4.4
9 or more	14.6
Total N	2856

Table 6:9

Number of Job Offers Respondent Received

	Percentage
1-2	78.8
3-4	17.1
5-6	2.8
7-8	0.5
9 or more	0.7
Total N	2609

Table 6:10

Unemployment Experiences

	Percentage
Never unemployed	83.6
Have been unemployed	16.4
Total N	3594

Table 6:11

Methods Used by Respondent to Obtain First Three Jobs

	Percentage		
	First Job	Second Job	Third Job
Personal contact (through family friends or relatives)	6.9	5.1	3.6
Business contact (through colleagues or contacts in same field)	14.1	15.6	17.2
Government employment agency	2.0	2.2	2.2
Private employment agency	2.2	2.8	3.9
University employment services	11.4	3.1	1.4
Newspaper or other advertisements	20.9	19.5	15.8
Approaching possible employers on one's own	34.5	37.0	35.2
Promotion with same employer	3.4	10.9	16.1
Other	4.8	3.8	4.5
Total N	3479	1720	715

Table 6:12

Respondent's Most Effective Job-Seeking Method

	Percentage
Personal contact (through family friends or relatives)	9.0
Business contact (through colleagues or contacts in same field)	25.0
Government employment agency	1.0
Private employment agency	2.1
University placement services	5.9
Newspaper or other advertisements	14.6
Approaching possible employers on one's own	39.3
Promotion with same employer	2.1
Other	1.0
Total N	3072

Table 6:13

Respondent's Present Salary

	Percentage
Less than \$2,500	3.1
\$2,500-\$5,000	3.7
\$5,000-\$7,500	13.4
\$7,500-\$10,000	34.2
\$10,000-\$12,500	21.3
\$12,500-\$15,000	13.8
Greater than \$15,000	10.4
Total N	3084

